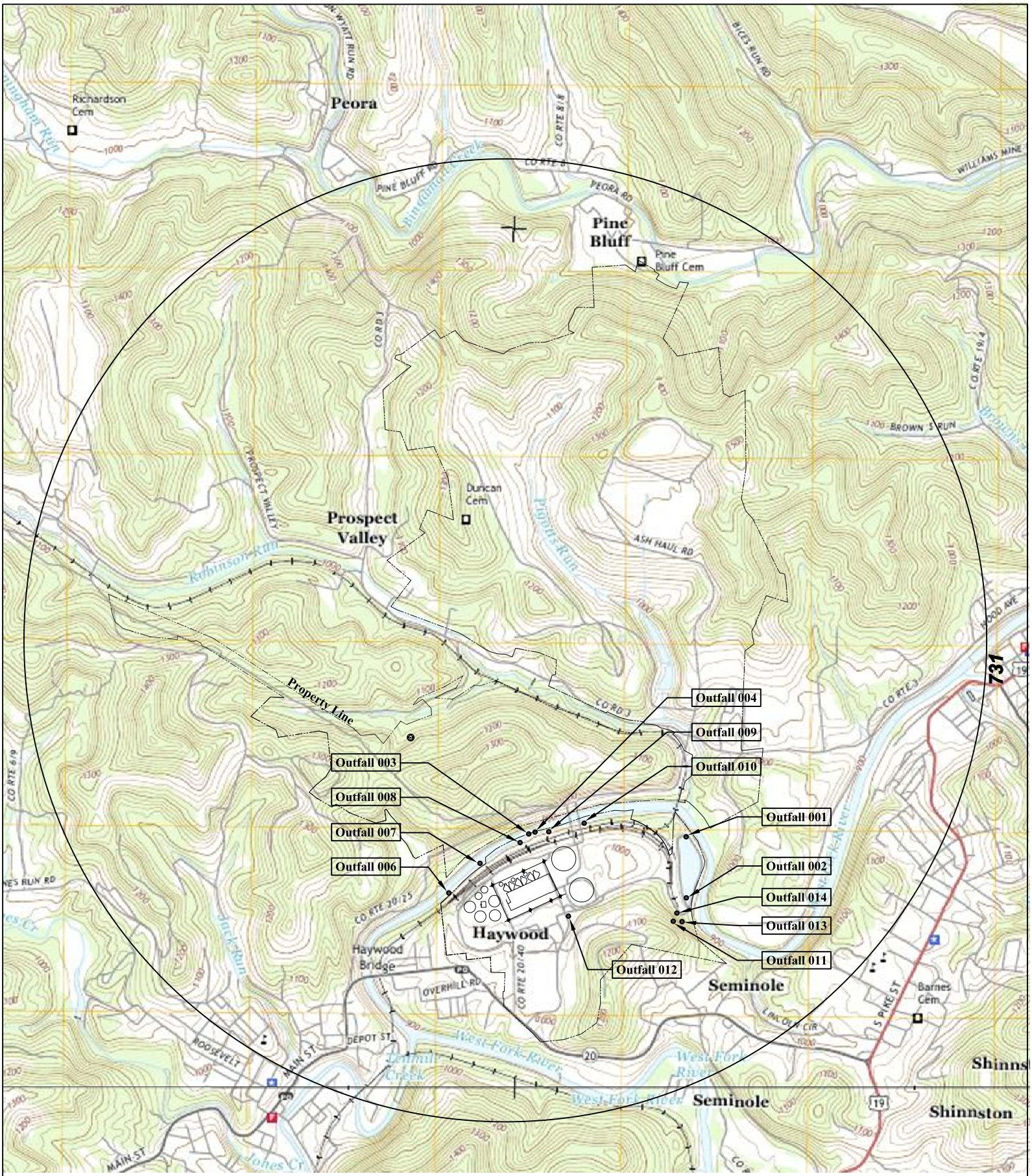


Monongahela Power Company

NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM
WATER POLLUTION CONTROL PERMIT

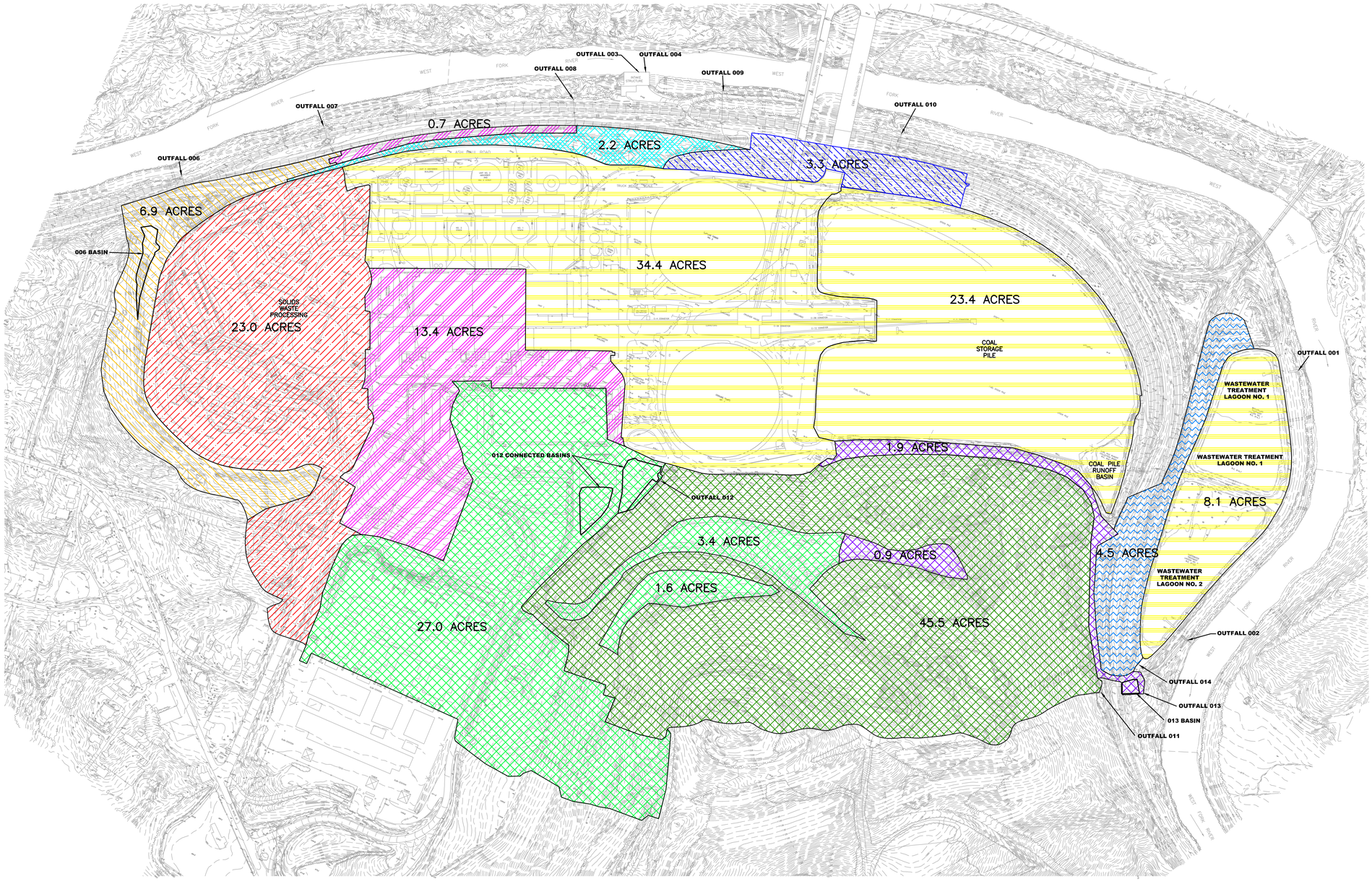
LOCATION MAP

REPRODUCED FROM U.S.G.S. MAP
SHINNSTON & CLARKSBURG WV QUADRANGLES

NOTE: AREA WITHIN 1/4 MILE OF PROPERTY IS ENCLOSED WITHIN A CIRCLE. MUNICIPAL WATER SYSTEM IS AVAILABLE TO THE TOWN OF HAYWOOD

Sketch PM01282021

IF BAR IS NOT 1 INCH, THIS DRAWING IS NOT TO SCALE



LEGEND

- AREA 001/002
- AREA 006
- AREA 007
- AREA 008
- AREA 010
- AREA 011 NEC
- AREA 012
- AREA 013
- AREA 014 NEC
- NO OUTLET

URS
1375 EUCLID AVE.
CLEVELAND, OHIO 44115

ISSUED FOR BIDDING — DATE — BY

ADDENDUM REVISIONS

ADDENDUM NO	ADDENDUM DATE	BY

ISSUED FOR CONSTRUCTION — DATE — BY

CONSTRUCTION REVISIONS

NO.	DESCRIPTION	DATE	BY
1	CHANGES BASED ON 2014 CONSTRUCTION	11/25/14	LDB
2	CHANGES BASED ON 2015 CONSTRUCTION	9/29/15	LDB

RECORD DRAWINGS — DATE — BY

STATE OF OHIO
LOUIS D. BURNOSKI
E-75236
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: JPF	CHECKED BY: LDB
JOB NO 13816075	
SCALE 1" = 200'-0"	

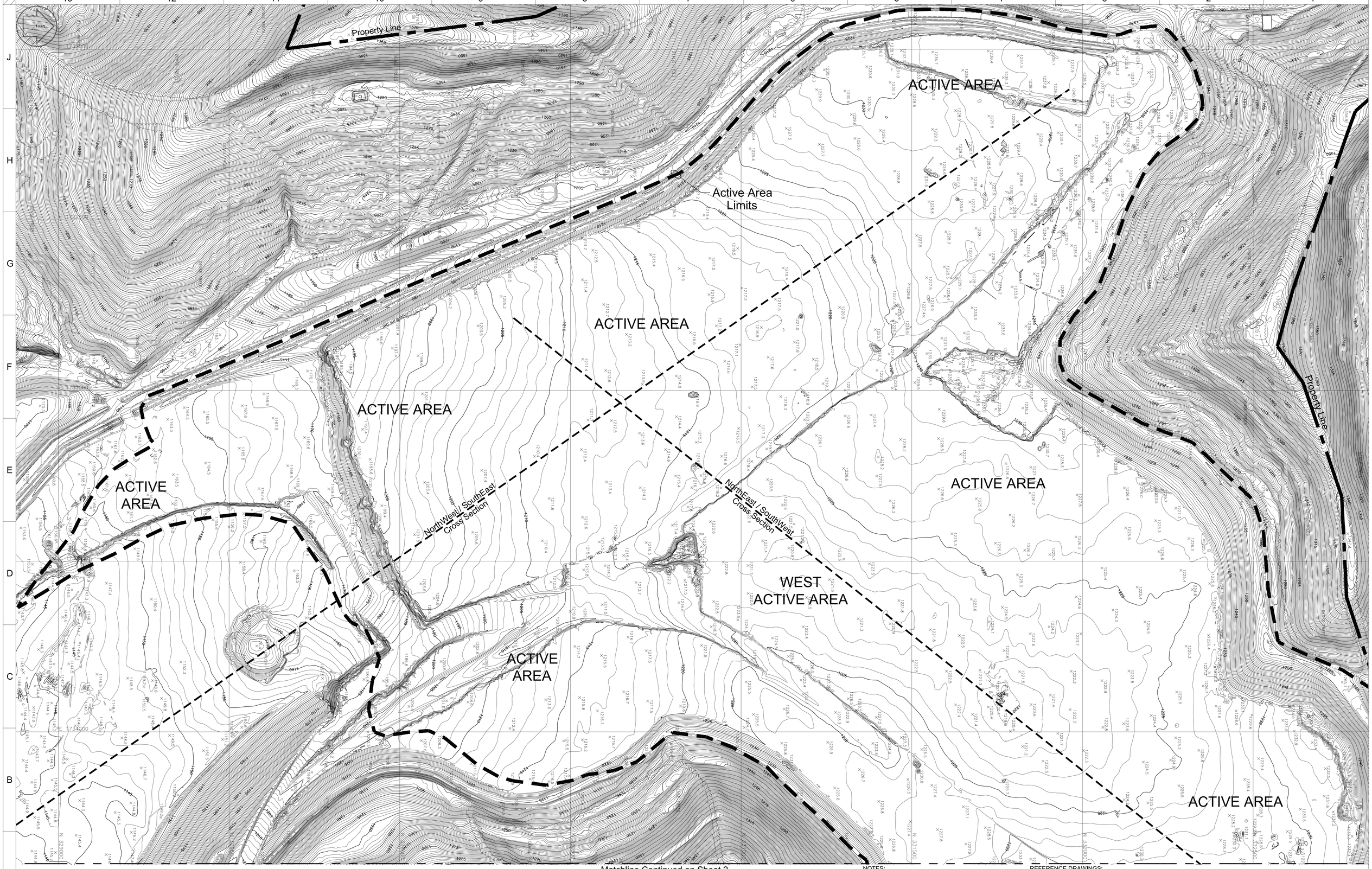
GRAPHIC SCALE

HARRI□ON
DRAINAGE MAP
□EP□EM□ER □□□□

FirstEnergy
□IR□□ENERGY
HARRI□ON □□A□ION

□□□□□□□□

K:\Projects\F\First Energy\13816075\DWGs\Overall Plan\C0100 – 2015–OVERALL DRAINAGE MAP.dwg User:louis_burnoski Sep 29, 2015 – 1:54pm



Matchline Continued on Sheet 2

NOTES:

1. COORDINATES SHOWN ARE BASED ON THE WEST VIRGINIA STATE PLANE COORDINATE SYSTEM, NORTH ZONE NAD 83.
2. CONTOUR INTERVALS ARE EVERY 1 FOOT.
3. KII - KUCERA INTERNATIONAL INCORPORATED Harrison 2020.dwg KII 3D ELECTRONIC FILE

REFERENCE DRAWINGS:

506-925 - PROPERTY PLAN
C8930001 - BOUNDARY ADJ. PLAN

FUNCTIONAL LOCATION NO. _____

Last .Net editor version: BECM v1.3

REVISION	DR	CHKD	APPD	DATE

PROJECT NUMBER

733

REFERENCE DRAWINGS		ENGINEERING	DATE
DWG. NO. C89503328-2	TITLE CCB ACTIVE LANDFILL 2020 TOPOGRAPHY MAPPING	DR KII/RDC	04/28/2020
C89503328-3	CCB ACTIVE LANDFILL CROSS SECTIONS	CHKD PEM	04/29/2020
C89503328-4	CCB ACTIVE LANDFILL CROSS SECTION	APPD PEM	04/29/2020
C89503328-5	CCB ACTIVE LANDFILL CROSS SECTION	SCALE 1" = 100'-0"	

INITIAL PROJECT # 47952452

THIS IS AN AutoCAD DRAWING - DO NOT MANUALLY REVISE

CCB ACTIVE LANDFILL
2020 TOPOGRAPHIC MAPPING
DATE OF AERIAL PHOTOGRAPHY 3-13-2020

FACILITY HARRISON UNIT COMMON

Monongahela Power Company

DWG. NO. C89503328-1

REV.

1. THE BASE TOPOGRAPHIC INFORMATION SHOWN WAS OBTAINED FROM THE APPLICABLE SHEETS OF DRAWING NO. C8950060. THE MAPPING SHOWN ON DRAWING NO. C8950060 WAS PREPARED BY L. ROBERT KIMBALL & ASSOCIATES AND IS BASED ON AERIAL PHOTOGRAPHY DATED APRIL 9, 1990 AND UPDATED FROM PHOTOGRAPHY DATED MAY 14, 1996.
2. STORAGE TANK LOCATIONS ARE BASED ON APSC DRAWING NO. 513-941, REV. 2 PREPARED BY MICHAEL BAKER, JR AND UPDATED INFORMATION PROVIDED BY ALLEGHENY ENERGY SUPPLY COMPANY, LLC, IN 2001.

LEGEND

- A1HR – ABOVE GROUND STORAGE TANKS
- UG-2HR – UNDERGROUND STORAGE TANKS
- UNDERGROUND PIPE AND DIRECTION OF FLOW
- MANHOLE (SOLID COVER)
- INLET (SEALED AT SURFACE)
- INLET (OPEN)
- CONCRETE TRENCH AND DIRECTION OF FLOW
- ROOF DRAIN
- IMPERVIOUS SURFACE

PLAN

SCALE: 1" = 100'

0 100 200 300 FEET

Last Edit: Aug. 22, 2002

ORBITAL ENGINEERING, INC
PITTSBURGH • CHICAGO • CLEVELAND • PHILADELPHIA
OAK BROOK • TOLEDO • CHARLESTON, WV • BIRMINGHAM

PROJECT 01-7296

Monongahela Power Company

FUNCTIONAL LOCATION NO.

Last Net editor version: BECM v1.3

THIS IS AN AutoCAD DRAWING - DO NOT MANUALLY REVISE

REVISION	DR	CHKD	APPD	DATE
H	RC	MJ	MJ	06/28/2018
ADDED TANK A354HR IN WASTE BUILDING REMOVED TANK A98HR AND RELOCATED TANK A167HR TO WHERE TANK A98HR WAS				
G	RC	MJ	MJ	03/05/2018
ADDED TANK A353HR				
F	RC	GH	GH	05/25/2016
ADDED TANKS A350HR, A351HR AND A352HR. REMOVED TANK A126HR				
E	RC	GH	GH	11/24/2014
UPDATED & ADDED TANKS A312HR THRU A316HR				
D	10/2/10	JH		
ADDED TANKS A310HR & A311HR REMOVED TANK UG-2HR				
C	9/27/07	JM		
REVISED AND ADDED TANK A300HR				
B	9/21/03	JH		
REVISED AND ADDED TANK INFORMATION				
A	8/28/02	EPV		
FOR APPROVAL				

PROJECT NUMBER

REFERENCE DRAWINGS		ENGINEERING	DATE
DWG. NO.	TITLE	DR	
		CHKD	
		APPD	
		SCALE NONE	

SPILL PREVENTION
CONTROL AND COUNTERMEASURES
FACILITY DIAGRAM

FACILITY HARRISON UNIT COMMON

FirstEnergy GENERATION, LLC

DWG. NO.

REV. H

LEGEND

- TREE/SHRUB LINE
- DRAINAGE CHANNEL
- EDGE OF WATER
- LIMOL
- TSL — TOTAL SURVEY LIMITS
- UML — UTILITY MAPPING LIMITS
- GAS — GAS UTILITY
- ELEC — ELECTRIC UTILITY
- CHEM — CHEMICAL CONDUIT
- STM — STORM UTILITY
- LEACHATE PIPE
- GUARDRAIL
- EDGE OF ROAD
- ROAD CENTERLINE
- RAILROAD
- 967.5 — SPOT ELEVATION
- PROPOSED DRAINAGE CHANNEL
- 990 — PROPOSED CONTOURS
- PROPOSED STORM UTILITY
- PROPOSED LEACHATE CONVEYANCE PIPE CENTERLINE
- OHE — PROPOSED OVERHEAD ELECTRIC LINE
- BORING START/STOP INDICATOR
- CFS — CFS — COMPOST FILTER SOCK
- PROPOSED MANHOLE
- CLEANOUT
- COMBINATION AIR RELEASE VALVE / AIR VACUUM VALVE
- ISOLATION VALVE
- INLET PROTECTION
- STORMWATER INLET
- ELECTRIC PULLBOX
- ELECTRICAL BOX
- SIGN
- LIGHT POLE

MAPPING NOTE:

1. EXISTING TOPOGRAPHY SHOWN IS A COMBINATION OF FLOWN TOPOGRAPHY DATED APRIL 10, 2018 OBTAINED BY GAI CONSULTANTS INC., FLOWN TOPOGRAPHY DATED APRIL 8, 1990 OBTAINED BY L. ROBERT KIMBALL AND ASSOCIATES, AND GROUND SURVEY PERFORMED BY GAI CONSULTANTS IN OCTOBER 2018.
2. A UTILITY MAPPING INVESTIGATION WAS PERFORMED BY THG GEOPHYSICS IN MARCH 2019 TO LOCATE AND MAP SUBSURFACE UTILITIES AT SEVERAL AREAS ACROSS THE PROJECT SITE.

NORTH

SCALE: 1" = 200'

200 0 200 400

ISSUED FOR CONSTRUCTION
06/07/2019

gai consultants

FUNCTIONAL LOCATION NO. _____

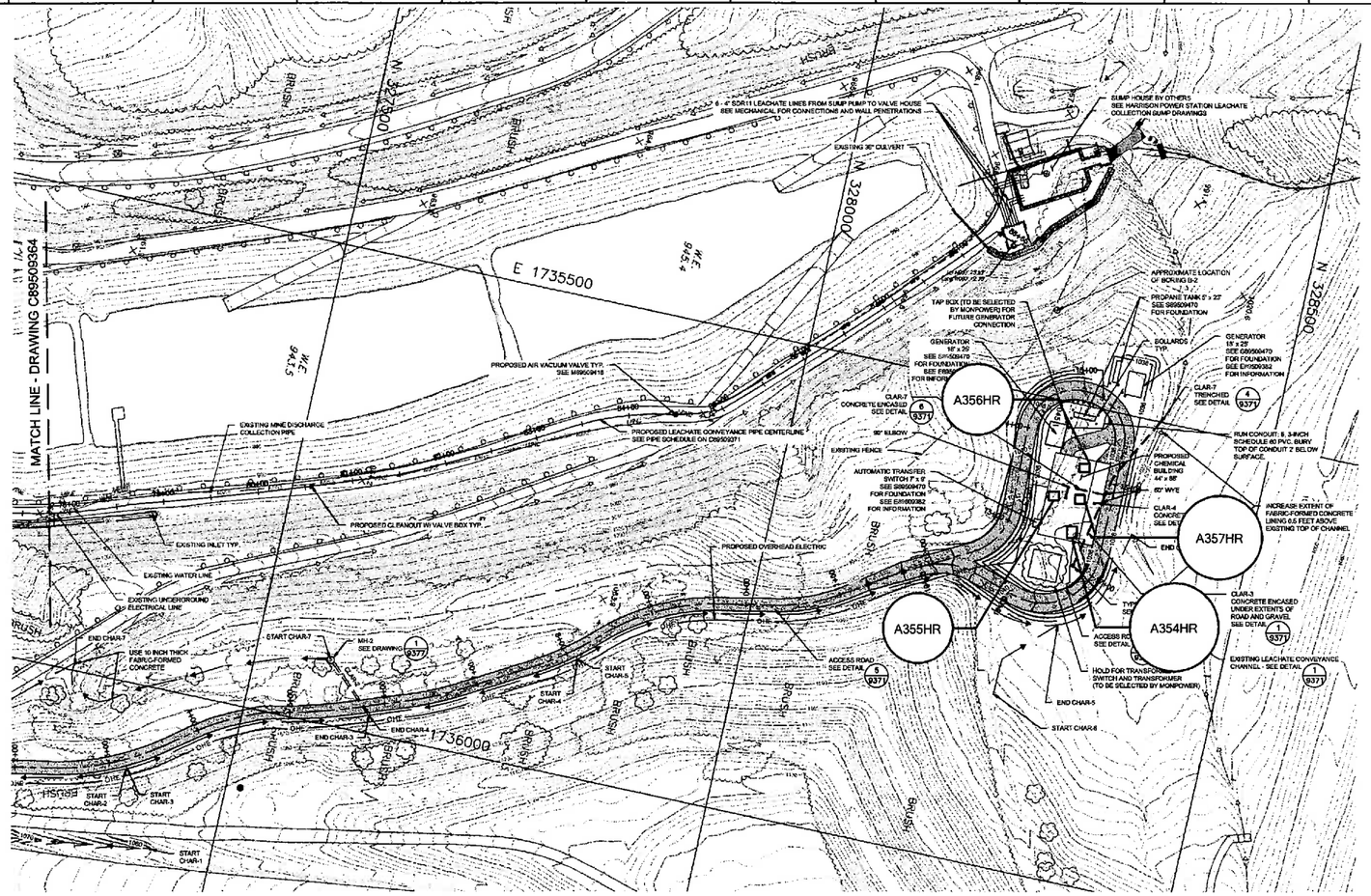
THIS IS AN AutoCAD DRAWING - DO NOT MANUALLY REVISE

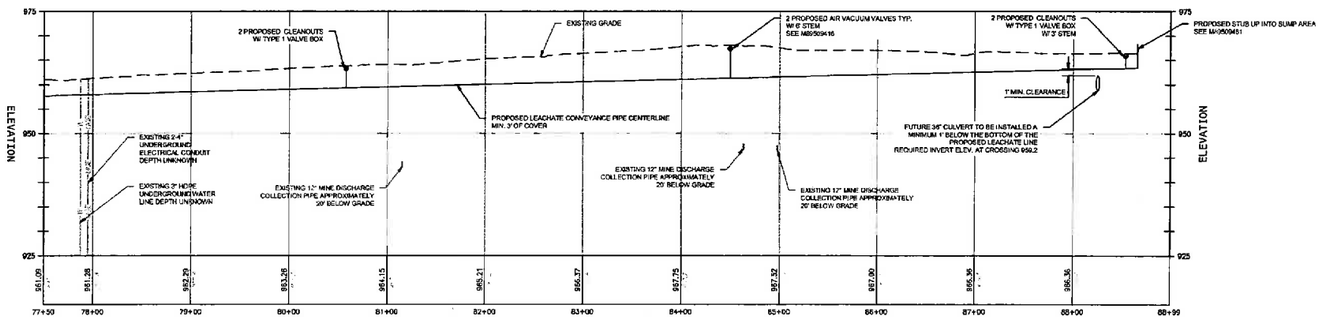
REFERENCE DRAWINGS	
C8950080	1990 TOPOGRAPHIC MAPPING
C8950129	SED. POND NO. 1 EXPANSION FINAL PLAN

	ENGINEER/ID	DATE
DES'D	PANEK/A	06/7/2019
DWN	CORTES/N	06/7/2019
CHK'D	KUMO/MW	06/7/2019
SCALE	AS NOTED	

CIVIL
LEACHATE CONVEYANCE
OVERALL LEACHATE CONVEYANCE PIPE LAYOUT
FACILITY HARRISON UNIT 01

MonPower — DWG. NO. C89509358 — REV.





Leachate Alignment PROFILE
SCALE: 1"=50' HORIZ.
1"=10' VERT.

MAPPING NOTE:

1. EXISTING TOPOGRAPHY SHOWN IS A COMBINATION OF FLOWN TOPOGRAPHY DATED APRIL 13, 2016 OBTAINED BY GAI CONSULTANTS INC., FLOWN TOPOGRAPHY DATED APRIL 9, 1990 OBTAINED BY L. ROBERT KIMBALL AND ASSOCIATES, AND GROUND SURVEY PERFORMED BY GAI CONSULTANTS IN OCTOBER 2016.
2. CONTRACTOR SHALL VERIFY UTILITY LOCATIONS IN THE FIELD AND COORDINATE WITH OWNER IN THE EVENT OF ANY DISCREPANCIES.

CHANNEL AND CULVERT NOTE:

1. SEE SHEET C89509371 FOR CHANNEL SCHEDULE AND DETAILS.
2. SEE SHEET C89509371 FOR CULVERT SCHEDULE AND DETAILS.

GRADING NOTE:

1. GRADING FOR ACCESS ROAD NOT SHOWN AS FIELD CONDITIONS HAVE BEEN CHANGED. CONTRACTOR TO GRADE PER DETAIL 5/9371

EXCAVATION NOTE:

1. AN ADDITIONAL EXISTING UNDERGROUND ELECTRIC LINE, NOT SHOWN ON THESE PLANS, MAY BE ENCOUNTERED BETWEEN STATIONING 79+00 AND 88+00
2. CONTRACTOR SHALL FIELD VERIFY LOCATION PRIOR TO EXCAVATION IN THESE AREAS.

EROSION AND SEDIMENT CONTROL NOTE:

1. CONTRACTOR SHALL PROTECT AND MAINTAIN CHANNELS AND POND FROM ACCUMULATION OF SEDIMENT. ANY SEDIMENT TO BE REMOVED BY CONTRACTOR.

LEGEND

- TREES/BUG LINE
- DRAINAGE CHANNEL
- EDGE OF WATER
- BENCH
- TSL — TOTAL SURVEY LIMITS
- UML — UTILITY MAPPING LIMITS
- GAS — GAS UTILITY
- ELEC — ELECTRIC UTILITY
- CHEM — CHEMICAL CONDUIT
- STORM — STORM UTILITY
- LEACHATE PIPE
- SUBTERRA
- EDGE OF ROAD
- ROAD CENTERLINE
- RAILROAD
- 867.5 X — SPOT ELEVATION
- PROPOSED DRAINAGE CHANNEL
- 990 — PROPOSED CONTOURS
- PROPOSED STORM UTILITY
- PROPOSED LEACHATE CONVEYANCE PIPE CENTERLINE
- OHE — PROPOSED OVERHEAD ELECTRIC LINE
- BORING START/STOP INDICATOR
- CFS — COMPOST FILTER SOCK
- PROPOSED MANHOLE
- CLEAN OUT
- COMBINATION AIR RELEASE VALVE / AIR VACUUM VALVE
- ISOLATION VALVE
- RIP RAP PROTECTION
- STORMWATER INLET
- ELECTRIC PULLBOX
- ELECTRICAL BOX
- SIGN
- LIGHT POLE

PROFILE NOTES

1. PROPOSED PIPE ELEVATIONS SHOWN ON THE PROFILE REPRESENT THE OUTSIDE TOP OF THE PIPE.
2. ELEVATIONS SHOWN FOR EXISTING UTILITY LINEWORK ARE APPROXIMATE. ELEVATIONS NOT OBTAINED THROUGH THIS GEOPHYSICS UTILITY INVESTIGATION HAVE BEEN OBTAINED FROM VARIOUS RECORD DOCUMENTS FROM 1950 TO 2016 AND MAY NOT BE REPRESENTATIVE OF AS-BUILT DATA.
3. VERTICAL LINEWORK REPRESENTS UNKNOWN ELEVATIONS OF EXISTING UTILITY CROSSINGS ALONG THE PROPOSED STATIONING. LOCATIONS SHOWN ARE APPROXIMATE, CONTRACTOR TO FIELD VERIFY.

SCALE: 1" = 50'
50 0 50 100

ISSUED FOR CONSTRUCTION
05/31/2019

FUNCTIONAL LOCATION NO. _____

gai consultants

REVISION	BY	CHKD	APVD	DATE

REFERENCE DRAWINGS	
DWG NO.	TITLE
C91-56126	SED. POND NO. 1 EXPANSION EXCAVATION PLAN
C89509321	LEACHATE COLLECTION SUMP PROPOSED OVERALL

ENGINEERING	DATE
DR: PANEKJA	04/30/2019
CHK: CORTEMIN	04/01/2019
APP: KULSINGAM	04/01/2019
SCALE: AS NOTED	

THIS IS AN AutoCAD DRAWING - DO NOT MANUALLY REVISE

CIVIL
LEACHATE CONVEYANCE
CONVEYANCE LINE - 7 OF 7

FACILITY HARRISON UNIT 01

MonPower — DWG NO. C89509365 — REV

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
1	Empty		10,000	NaOH	Inside Station, wastewater treatment area	Inside Station, wastewater treatment area	Steel	1971	Floor drains direct spills to wastewater	For demineralizer - decommissioned
2	OOS		325	NaOH	Inside Station, wastewater treatment area	Inside Station, wastewater treatment area	Steel	1971	Floor drains direct spills to wastewater	OUT OF SERVICE
3	Removed		10,000	H_2SO_4	Inside Station, Water Treatment Area, 1st Floor	Inside Station, Water Treatment Area, 1st Floor	Steel	1991	Floor drains direct spills to wastewater	For demineralizer - decommissioned 7/2014 REMOVED 2015
4	CIU	17-2610	10,000	H_2SO_4	Outside, South end by Cooling tower pumphouse	Outside, South end by Cooling tower pumphouse	Steel	1973	Concrete Dike	circulating water treatment for cooling tower
5	Removed		1,000	Anhydrous Ammonia	BETWEEN CONDENSATE TANKS	BETWEEN CONDENSATE TANKS	Steel	1974	DITCH DIRECTS SPILLS TO W. WATER	REMOVED 1996-7?
6	Removed	17-2633	12,000	Coal Flow Additive	Behind #1 UnitT, Under gas duct	Behind #1 UnitT, Under gas duct	Fiberglass	1980	Floor drains direct spills to wastewater	Aqueous blend of Alkyl Aryl Polyoxyethanol (Aquashed 175) REMOVED 2015
7	Removed	17-2608	12,000	Coal Flow Additive	Behind #3 Unit, under gas duct	Behind #3 Unit, under gas duct	Fiberglass	1980	Floor drains direct spills to wastewater	Aqueous blend of Alkyl Aryl Polyoxyethanol (Aquashed 175) REMOVED 2015
8	Removed	17-2579	12,000	Coal Flow Additive	Behind #3 Unit, under gas duct	Behind #3 Unit, under gas duct	Fiberglass	1980	Floor drains direct spills to wastewater	Aqueous blend of Alkyl Aryl Polyoxyethanol (Aquashed 175) REMOVED 2015
9	CIU		1,200	Propylene Glycol	Inside Station, Elev.1046, Col. G-6	Inside Station, Elev.1046, Col. G-6	Steel	1971	Floor drains direct spills to oil/water separator	Boiler Head Tank
10	CIU		1,200	Propylene Glycol	Inside Station, Elev. 1046, Col. G-14	Inside Station, Elev. 1046, Col. G-14	Steel	1971	Floor drains direct spills to oil/water separator	Boiler Head Tank
11	CIU		1,200	Propylene Glycol	Inside Station, Elev. 1046, Col. G-22	Inside Station, Elev. 1046, Col. G-22	Steel	1971	Floor drains direct spills to oil/water separator	Boiler Head Tank
12	CIU		500	Propylene Glycol	Transfer House 4	Transfer House 4	2-Wall Poly	2002	double walled tank	
13	Removed		1,000	Propylene Glycol	Transfer House 6	Transfer House 6	Steel		None	REMOVED - 2002
14	CIU	17-2622	4,000	Nalco-3DT121	Inside cooilng tower treatment bldg.	Inside cooilng tower treatment bldg.	Polyethylene	1995	Sealed, self contained building floor	Cooling tower dispersant
15	CIU	17-2637	750,000	Metal wash clean eff	Between #3 Unit & Lime Silos	Between #3 Unit & Lime Silos	Steel	1971	Area drains to wastewater treatment	Final effluent treated metal wash
16	CIU		300	#2 Fuel Oil	Inside Station, Elev. 978 Near Col. K-9	Inside Station, Elev. 978 Near Col. K-9	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 Emergency Generator
17	CIU		300	#2 Fuel Oil	Inside Station, Elev. 978 Near Col. K-9	Inside Station, Elev. 978 Near Col. K-9	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 Emergency Generator
18	CIU		200	#2 Fuel Oil	Inside Screen House	Inside Screen House	Steel	1971	Concrete containment	Emergency Fire Pump
19	Removed		125,000	#2 Fuel Oil	Between Unit #3 & Lime Silos	Between Unit #3 & Lime Silos	Steel		Concrete Dike	Decommissioned REMOVED 2015
20	CIU	17-2605	4,000	Kerosene	Between Cooling Towers	Between Cooling Towers	Steel	1987	Concrete Dike	
21	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col.B-4	Inside Station, Elev. 978, Col.B-4	Steel	1974	Floor drains direct spills to oil/water separator	BFP 1A Turbine Oil Reservior
22	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-6	Inside Station, Elev. 978, Col. B-6	Steel	1974	Floor drains direct spills to oil/water separator	BFP 1B Turbine Oil Reservior
23	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-12	Inside Station, Elev. 978, Col. B-12	Steel	1974	Floor drains direct spills to oil/water separator	BFP 2A Turbine Oil Reservior
24	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-14	Inside Station, Elev. 978, Col. B-14	Steel	1974	Floor drains direct spills to oil/water separator	BFP 2B Turbine Oil Reservior
25	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-20	Inside Station, Elev. 978, Col. B-20	Steel	1974	Floor drains direct spills to oil/water separator	BFP 3A Turbine Oil Reservior
26	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-22	Inside Station, Elev. 978, Col. B-22	Steel	1974	Floor drains direct spills to oil/water separator	BFP 3B Turbine Oil Reservior
27	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. TB-9	Inside Station, Elev. 978, Col. TB-9	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 Soot Blower Air Compressor - Lube Oil
28	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. TB-10	Inside Station, Elev. 978, Col. TB-10	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 Soot Blower Air Compressor - Lube Oil
29	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. TB-17	Inside Station, Elev. 978, Col. TB-17	Steel	1971	Floor drains direct spills to oil/water separator	Unit #3 Soot Blower Air Compressor - Lube Oil
30	CIU	17-2590	12,200	Equipment Oil	30 (17-2590)	Inside Station, Under Unit #1 Turbine	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 Main Turbine Reservoir
31	CIU	17-2598	12,200	Equipment Oil	31 (17-2598)	Inside Station, Under Unit #2 Turbine	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 Main Turbine Reservoir
32	CIU	17-2629	12,200	Equipment Oil	32 (17-2629)	Inside Station, Under Unit #3 Turbine	Steel	1971	Floor drains direct spills to oil/water separator	Unit #3 Main Turbine Reservoir
33	CIU		932	Equipment Oil	Inside Station, 1st Floor, Unit #1	Inside Station, 1st Floor, Unit #1	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 Turbine Oil Purifier (Bowser)
34	CIU		932	Equipment Oil	Inside Station, 1st Floor, Unit #2	Inside Station, 1st Floor, Unit #2	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 Turbine Oil Purifier (Bowser)
35	CIU		932	Equipment Oil	Inside Station, 1st Floor, Unit #3	Inside Station, 1st Floor, Unit #3	Steel	1971	Floor drains direct spills to oil/water separator	Unit #3 Turbine Oil Purifier (Bowser)
36	Removed		300	Hydraulic Oil	Inside Station, Elev. 1000, Col. A-3	Inside Station, Elev. 1000, Col. A-3	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 E.H. System - Turbine Control - Removed 2005
37	Removed		300	Hydraulic Oil	Inside Station, Elev. 1000, Col. A-11	Inside Station, Elev. 1000, Col. A-11	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 E.H. System - Turbine Control - Removed 2007
38	Removed		300	Hydraulic Oil	Inside Station, Elev. 1000, Col. A-19	Inside Station, Elev. 1000, Col. A-19	Steel	1971	Floor drains direct spills to oil/water separator	Unit #3 E.H. System - Turbine Control - Removed 2006
39	CIU		1,000	Used Oil/Degreaser	Outside between cooling towers, beside make up pumps	Outside between cooling towers, beside make up pumps	Concrete	1971	Ditch Directs Spills To O/W Separator	From O/W Sep, Holding tank taken Tank 51 to be burned
40	CIU		27,600	Dielectric Oil	AP Switchyard	AP Switchyard	Steel	1971	none	Spare Transformer
41	CIU		29,900	Dielectric Oil	Outside Station, East Side Of Unit #2	Outside Station, East Side Of Unit #2	Steel	1972	Concrete Pit, manual pump to O/W seperator	Unit #2 Main Transformer
42	CIU		24,600	Dielectric Oil	Adjacent to HA switchyard	Adjacent to HA switchyard	Steel	1973	below grade containment pit - no pump	Spare Transformer
43	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #1	Outside Station, East Side Of Unit #1	Steel	1971	Concrete Pit, manual pump to O/W seperator	Unit #1 Auxiliary Transformer
44	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #2	Outside Station, East Side Of Unit #2	Steel	1973	Concrete Pit, manual pump to O/W seperator	Unit #2 Auxiliary Transformer
45	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #3	Outside Station, East Side Of Unit #3	Steel	1974	Concrete Pit, manual pump to O/W seperator	Unit #3 Auxiliary Transformer
46	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #1	Outside Station, East Side Of Unit #1	Steel	2005	Concrete Pit, manual pump to O/W seperator	Unit #1 Auxiliary Transformer
47	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #2	Outside Station, East Side Of Unit #2	Steel	2005	Concrete Pit, manual pump to O/W seperator	Unit #2 Auxiliary Transformer
48	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #3	Outside Station, East Side Of Unit #3	Steel	2005	Concrete Pit, manual pump to O/W seperator	Unit #3 Auxiliary Transformer
49	CIU		4,750	Dielectric Oil	South Side of Condensate Tanks	South Side of Condensate Tanks	Steel	2005	Concrete Pit, manual pump to O/W seperator	Reserve Transformer
50	CIU		4,750	Dielectric Oil	South Side of Condensate Tanks	South Side of Condensate Tanks	Steel	2005	Concrete Pit, manual pump to O/W seperator	Reserve Transformer
51	CIU		1,200	Waste Oil	Ash Pit, Unit #1	Ash Pit, Unit #1	Steel	1989	Concrete Dike	Burn Tank
52	Removed		100	Hazardous Waste O	Inside Station, Ash Pit, Unit #1	Inside Station, Ash Pit, Unit #1	Steel	1984	Concrete Dike	REMOVED - 2004
53	CIU	17-2625	12,000	#2 Fuel Oil	53 (17-2625)	Outside, Coal Handling	Steel	1990	Concrete Dike	
54	CIU		3,660	Dielectric Oil	Outside Station, East Side Of Unit #1	Outside Station, East Side Of Unit #1	Steel	2005	Concrete Pit	Scrubber Unit Transformer #1
55	CIU		3,660	Dielectric Oil	Outside Station, East Side Of Unit #2	Outside Station, East Side Of Unit #2	Steel	2005	Concrete Pit	Scrubber Unit Transformer #2
56	CIU		3,660	Dielectric Oil	Outside Station, East Side Of Unit #3	Outside Station, East Side Of Unit #3	Steel	2005	Concrete Pit	Scrubber Unit Transformer #3
57	CIU		4,185	Dielectric Oil	Outside Station, North Of Condensate Tanks	Outside Station, North Of Condensate Tanks	Steel	2005	Concrete Pit	Scrubber Reserve Transformer A
58	CIU		4,185	Dielectric Oil	Outside Station, North Of Condensate Tanks	Outside Station, North Of Condensate Tanks	Steel	2005	Concrete Pit	Scrubber Reserve Transformer B
59	Not Tank		250 Ton	Lime	In/Outside Solid Waste Prep Bldg.	In/Outside Solid Waste Prep Bldg.	Steel	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
60	Not Tank		250 Ton	Lime	In/Outside Solid Waste Prep Bldg.	In/Outside Solid Waste Prep Bldg.	Steel	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
61	Not Tank		250 Ton	Lime	In/Outside Solid Waste Prep Bldg.	In/Outside Solid Waste Prep Bldg.	Steel	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
62	Not Tank		95,425 Cu. F	Fly Ash	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
63	Not Tank		95,425 Cu. F	Fly Ash	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
64	Not Tank		95,425 Cu. F	Fly Ash	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
65	CIU	17-2580	1,290,000	Underflow Slurry	65	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Underflow (centrifuge feed) Tank (FGDs solids)
66	CIU	17-2613	1,290,000	Underflow Slurry	66	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Underflow (centrifuge feed) Tank (FGDs solids)
67	CIU	17-2638	1,290,000	Underflow Slurry	67	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Underflow (centrifuge feed) Tank (FGDs solids)
68	CIU		4,329,312	Waste Slurry	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel shell/conc.bo	1995	To Retention Basin	Thickener (FGD Solids)
69	CIU		4,329,312	Waste Slurry	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel shell/conc.bo	1995	To Retention Basin	Thickener (FGD Solids)
70	CIU		4,329,312	Waste Slurry	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel shell/conc.bo	1995	To Retention Basin	Thickener (FGD Solids)
71	CIU		4,329,312	Waste Slurry	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel shell/conc.bo	1995	To Retention Basin	Thickener (FGD Solids)
72	CIU	17-2596	596,000	Clarified Overflow Li	72	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Overflow Tank
73	CIU	17-2607	596,000	Clarified Overflow Li	73	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Overflow Tank
74	CIU	17-2577	1,400,000	Centrate	74	Scrubber Waste Processing Area	Steel	1995	To Retention Basin	Centrate Storage Tank
75	CIU	17-2583	1,400,000	Centrate	75	Scrubber Waste Processing Area	Steel	1995	To Retention Basin	Centrate Storage Tank
76	CIU		350	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Polymer feed tank for scrubber
77	CIU		350	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Polymer feed tank for scrubber
78	CIU		350	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Polymer feed tank for scrubber
79	CIU		350	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Polymer feed tank for scrubber
80	CIU	17-2627	2,000	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Bulk Polymer Storage Tank, Feeds 76-79
81	Not Tank		28,500 Ton	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	Sump to Retention Basin	Main Lime Storage Silo , Solid Material NOT A TANK
82	Not Tank		28,500 Ton	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	Sump to Retention Basin	Main Lime Storage Silo , Solid Material NOT A TANK
83	CIU	17-2615	1,000,000	Water	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Make-up water tank for scrubber
84	CIU	17-2593	100,000	Water	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Seal water tank for scrubber
85	Not Tank		3,631 Cu. Ft.	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Air Lime Unloading Surge Silo, Solid Material NOT A TANK
86	Not Tank		3,631 Cu. Ft.	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Air Lime Unloading Surge Silo, Solid Material NOT A TANK
87	Not Tank		3,631 Cu. Ft.	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Air Lime Unloading Surge Silo, Solid Material NOT A TANK
88	CIU	17-2616	363,366	Scrubber Process Fl	88	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Absorber lime slurry feed tank
89	CIU	17-2641	363,366	Scrubber Process Fl	89	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Absorber lime slurry feed tank
90	CIU	17-2609	363,366	Scrubber Process Fl	90	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Absorber lime slurry feed tank
91	CIU	17-2623	109,000	Lime Slurry	91	Inside lime silo	Steel	1995	Sump to Retention Basin	Lime slurry transfer tank
92	CIU	17-2612	109,000	Lime Slurry	92	Inside lime silo	Steel	1995	Sump to Retention Basin	Lime slurry transfer tank
93	CIU	17-2630	109,000	Lime Slurry	93	Inside lime silo	Steel	1995	Sump to Retention Basin	Lime slurry transfer tank
94	CIU	17-2582	109,000	Lime Slurry	94	Inside lime silo	Steel	1995	Sump to Retention Basin	Lime slurry transfer tank
95	CIU		275	#2 Fuel Oil	Inside Elec. Eqmt Rm(SW corner)	Inside Electrical Equipment Room (SW corner)	Steel	1995	Floor drains direct spills to oil/water separator	# 3 Emergency Generator
96	CIU		330	Ammonium Hydroxic	Inside, Wastewater Treatment	Inside, Wastewater Treatment	Polypropylene	1995	Floor drains direct spills to wastewater	Tote, Replaces Anhydrous Ammonia Tank (A5HR)
97	CIU	17-2585	1,500	Nalco - ACTI BROM	Cooling Tower Chemical Treatment Bldg.	Cooling Tower Chemical Treatment Bldg.	Polypropylene	1991	Sealed, self contained building floor	Cooling Tower Biocide
98	Removed	17-2591	1,500	Nalco - CORE SHEL	Cooling Tower Chemical Treatment Bldg.	Cooling Tower Chemical Treatment Bldg.	Polypropylene	1991	Sealed, self contained building floor	Removed from Service 2017
99	CIU		330	Sodium Hypochlorit	Inside Station, water treatment area	Inside Station, water treatment area	Polypropylene		Floor drains direct spills to wastewater	For disinfection - NO LONGER USED
100	Removed			Lime	SE CORNER OF THE COAL PILE	SE CORNER OF THE COAL PILE	Concrete			REMOVED
101	Removed		600	Nalco 7767	Wastewater Pretreatment	Wastewater Pretreatment	Polyethylene	1985	Floor drains direct spills to wastewater	REMOVED
102	Removed		100	Nalco 7735	Inside, Wastewater Pretreatment	Inside, Wastewater Pretreatment	Polyethylene	1985	Floor drains direct spills to wastewater	REMOVED
103	CIU		50	Sodium Sulfite	Water Pretreatment	Water Pretreatment	Polyethylene	1995	Floor drains direct spills to wastewater	Dechlorination
104	CIU		600	NalcoTRAC 109	1st Floor, Main Plant Bldg.	1st Floor, Main Plant Bldg.	Steel	1968	Floor drains direct spills to oil/water separator	Scale inhibitor, feed tank
105	CIU		500	H_2SO_4	1st Floor of Main Plant, Demineralizer Area	1st Floor of Main Plant, Demineralizer Area	Polyethylene		To Neutralizing Basin	Demineralizer day tank
106	CIU		500	NaOH	1st Floor of Main Plant, Demineralizer Area	1st Floor of Main Plant, Demineralizer Area	Steel		To Neutralizing Basin	Demineralizer day tank
107	CIU		340	Nalco H-135	Inside Polymer Building	Inside Polymer Building	Polyethylene	1995	Retention Basin	Leased Tote, Biocide
108	Removed		340	Nalco H-135	Inside Polymer Building	Inside Polymer Building	Polyethylene		Retention Basin	Leased Tote, Biocide - REMOVED
109	CIU		340	Nalco H-135	Floor of Centrifuge Bldg	Floor of Centrifuge Bldg	Polyethylene	1995	Retention Basin	Leased Tote, Biocide
110	CIU		300	Sodium Hypochlorit	Sewage Treatment Building	Sewage Treatment Building	Polyethylene	1998	Polyethylene containment	Sewage treatment building
111	Removed		75	Hydrazine	1st Floor of Main Plant, Unit No. 1	1st Floor of Main Plant, Unit No. 1	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used
112	Removed		75	Hydrazine	1st Floor of Main Plant, Unit No. 2	1st Floor of Main Plant, Unit No. 2	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used
113	Removed		75	Hydrazine	1st Floor of Main Plant, Unit No. 3	1st Floor of Main Plant, Unit No. 3	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used
114	Removed		75	Hydrazine	1st Floor of Main Plant, (Spare Tank)	1st Floor of Main Plant, (Spare Tank)	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used
115	Removed		75	Hydrazine	1st Floor of Main Plant, (Spare Tank)	1st Floor of Main Plant, (Spare Tank)	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used - REMOVED
116	CIU		75	Ammonium Hydroxic	1st Floor of Main Plant, Unit No. 1	1st Floor of Main Plant, Unit No. 1	Stainless Steel	1971	Floor drains direct spills to wastewater	
117	CIU		75	Ammonium Hydroxic	1st Floor of Main Plant, Unit No. 2	1st Floor of Main Plant, Unit No. 2	Stainless Steel	1971	Floor drains direct spills to wastewater	
118	CIU		75	Ammonium Hydroxic	1st Floor of Main Plant, Unit No. 3	1st Floor of Main Plant, Unit No. 3	Stainless Steel	1971	Floor drains direct spills to wastewater	
119	CIU		75	Ammonium Hydroxic	1st Floor of Main Plant, (Spare Tank)	1st Floor of Main Plant, (Spare Tank)	Stainless Steel		Floor drains direct spills to wastewater	Tank is normally empty; it is a spare.
120	TOS		50	Trisodium Phospha	1st Floor of Main Plant at Auxiliary Boiler	1st Floor of Main Plant at Auxiliary Boiler	Stainless Steel	1971	Floor drains direct spills to wastewater	Tank is normally empty; this chemical is no longer used.
121	CIU		50	Ammonium Hydroxic	1st Floor of Main Plant at Auxiliary Boiler	1st Floor of Main Plant at Auxiliary Boiler	Stainless Steel	1971	Floor drains direct spills to wastewater	
122	CIU		75	Nalco 7396	Water Pretreatment	Water Pretreatment	Steel	1971	Floor drains direct spills to wastewater	Potable water system
123	CIU		100	Sodium Hypochlorite	Water Pretreatment	Water Pretreatment	Plastic	1971	Floor drains direct spills to wastewater	Tank is normally empty; Potable water system
124	CIU		500	Caustic (NaOH)	WATER PRETREATMENT	WATER PRETREATMENT	Steel		Floor drains direct spills to wastewater	Duplicate Listing to A2HR

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
125	CIU	17-2620	3,135	Propylene glycol	No. 2 condenser pit	No. 2 condenser pit	Polyethylene	2000	Floor drains direct spills to wastewater	Normally empty, lines run in trenches, do we need to keep?
126	OOS	17-2606	3,135	Propylene glycol	No. 2 condenser pit	No. 2 condenser pit	Polyethylene	2000	Floor drains direct spills to wastewater	Permanently OOS 2016 05 23 Replaced by 353
127	Removed		330	Calgon Chlor-Kill	Floor drains to wastewater treatment	Floor drains to wastewater treatment	Poly tote	2001	Polyethylene containment	Sodium Bisulfite 35% Sol'n - REMOVED
128	CIU		333	Dielectric oil	Outside RR thaw shed	Outside RR thaw shed	Steel		Concrete containment	Transformer
129	CIU		1,700	Truck wash water	Solids waste processing area truck wash	Solids waste processing area truck wash	Polyethylene		Self-contained floor sump	conical bottom solids settling tank
130	CIU		500,000	Scrubber process flu	No. 1 Scrubber absorber module	No. 1 Scrubber absorber module	Stainless	1995	Sump to retention basin	contains hydrated lime
131	CIU		500,000	Scrubber process flu	No. 2 Scrubber absorber module	No. 2 Scrubber absorber module	Stainless	1995	Sump to retention basin	contains hydrated lime
132	CIU		500,000	Scrubber process flu	No. 3 Scrubber absorber module	No. 3 Scrubber absorber module	Stainless	1995	Sump to retention basin	contains hydrated lime
133	Duplicate		109,000	Lime slurry	Beneath lime slurry tank	Beneath lime slurry tank	Steel	1995	Sump to retention basin	Duplicate Listing to A91HR
134	Duplicate		109,000	Lime slurry	Beneath lime slurry tank	Beneath lime slurry tank	Steel	1995	Sump to retention basin	Duplicate Listing to A92HR
135	Duplicate		109,000	Lime slurry	Beneath lime slurry tank	Beneath lime slurry tank	Steel	1995	Sump to retention basin	Duplicate Listing to A93HR
136	Duplicate		109,000	Lime slurry	Beneath lime slurry tank	Beneath lime slurry tank	Steel	1995	Sump to retention basin	Duplicate Listing to A94HR
137	CIU		4,000 tons	Fly ash/wastewater	North of old stack	North of old stack	Concrete	1971	Drains to wastewater	Transfer tank
138	CIU		4,000 tons	Fly ash/wastewater	North of old stack	North of old stack	Concrete	1971	Drains to wastewater	Transfer tank
139	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
140	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
141	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
142	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
143	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
144	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
145	Doesn't Exist			Dielectric oil	Rob. Run Coal Belt House 3	Rob. Run Coal Belt House 3	Steel		None	Transformer - Owned by Consol/on Consol property
146	CIU		393	Dielectric oil	Rob. Run Coal Belt House 4	Rob. Run Coal Belt House 4	Steel		Concrete containment	Transformer
147	CIU		75	Dielectric oil	Rob. Run Coal Belt House 5	Rob. Run Coal Belt House 5	Steel		Concrete containment	Transformer
148	CIU		286	Dielectric oil	Rob. Run Coal Belt House 6	Rob. Run Coal Belt House 6	Steel		Concrete containment	Transformer
159	Doesn't Exist			Dielectric oil	Rob. Run Coal Belt House 7	Rob. Run Coal Belt House 7	Steel		None	Transformer - never existed
160	CIU		508,640	Granular Urea	Adjacent to and west of #3 absorber bldg.	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Urea Storage Silo 501, dry material - NOT A TANK
161	CIU		508,640	Granular Urea	Adjacent to and west of #3 absorber bldg.	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Urea Storage Silo 502, dry material - NOT A TANK
162	CIU		508,640	Granular Urea	Adjacent to and west of #3 absorber bldg.	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Urea Storage Silo 503, dry material - NOT A TANK
163	CIU		508,640	Granular Urea	Adjacent to and west of #3 absorber bldg.	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Urea Storage Silo 504, dry material - NOT A TANK
164	CIU	17-2631	13,450	Urea Solution (40%)	164 (17-2631)	Adjacent to and west of #3 absorber bldg.	Stainless Steel	2001	Shared Concrete containment (A160 - A166)	Urea Dissolver Tank 501-1
165	CIU	17-2601	13,450	Urea Solution (40%)	165 (17-2601)	Adjacent to and west of #3 absorber bldg.	Stainless Steel	2001	Shared Concrete containment (A160 - A166)	Urea Dissolver Tank 501-2
166	CIU	17-2604	40,000	Urea Solution (40%)	166 (17-2604)	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Reactor Feed Tank
167	CIU	17-2632	2,000	Nalco Sure Cool 139	Inside Biocide building	Inside Biocide building	Poly	2002	Shared Concrete containment (A14, A97 and A167)	Biocide
168	CIU		35	Solvent	Inside station, first floor Unit 1 area	Inside station, first floor Unit 1 area	Steel		Floor drains direct spills to oil/water separator	parts washer
169	Removed		300	Bentonite Clay	Inside station, water pretreatment area	Inside station, water pretreatment area	Poly		Floor drains direct spills to wastewater	REMOVED
170	Removed		500	Sodium Sulfite	Sewage Treatment Building	Sewage Treatment Building	Poly	2002	Polyethylene containment	REMOVED
171	CIU		35	Solvent	Inside Station, first floor, column 23H	Inside Station, first floor, column 23H	Steel		Floor drains direct spills to oil/water separator	parts washer
172	CIU		15	Solvent	Outside coal handling building	Outside coal handling building	Steel		Concrete pad with trench drains pumped to OWS	parts washer
173	CIU		35	Solvent	Solids waste processing area shop (inside)	Solids waste processing area shop (inside)	Steel		Floor drains to retention basin	parts washer - ID No. 8-95
174	CIU	17-2639	1,700	Truck wash water	Truck wash at landfill (inside building)	Truck wash at landfill (inside building)	Poly	1992	Self-contained floor sump	conical bottom solids settling tank
175	CIU		200	Hydraulic Oil	Inside Station, Unit 1	Inside Station, Unit 1	Steel	2001	Floor drains direct spills to oil/water separator	SCR damper hydraulic feed reservoir
176	CIU		200	Hydraulic Oil	Inside Station, Unit 2	Inside Station, Unit 2	Steel	2001	Floor drains direct spills to oil/water separator	SCR damper hydraulic feed reservoir
177	CIU		200	Hydraulic Oil	Inside Station, Unit 3	Inside Station, Unit 3	Steel	2001	Floor drains direct spills to oil/water separator	SCR damper hydraulic feed reservoir
178	CIU		65	Lube oil	Inside lime slaker #21	Inside lime slaker #21	Steel	1991	Floor drans direct spills to retention basin	bearing lube oil reservoir
179	CIU		65	Lube oil	Inside lime slaker #22	Inside lime slaker #22	Steel	1991	Floor drans direct spills to retention basin	bearing lube oil reservoir
180	CIU		65	Lube oil	Inside lime slaker #12	Inside lime slaker #12	Steel	1991	Floor drans direct spills to retention basin	bearing lube oil reservoir
181	CIU		65	Lube oil	Inside lime slaker #11	Inside lime slaker #11	Steel	1991	Floor drans direct spills to retention basin	bearing lube oil reservoir
182	CIU		65	Hydraulic Oil	Inside Unit 1 scrubber building	Inside Unit 1 scrubber building	Steel	2001	Floor drains direct spills to wastewater	Scrubber knife gate hydraulic reservoir
183	CIU		65	Hydraulic Oil	Inside Unit 2 scrubber building	Inside Unit 2 scrubber building	Steel	2001	Floor drains direct spills to wastewater	Scrubber knife gate hydraulic reservoir
184	CIU		65	Hydraulic Oil	Inside Unit 3 scrubber building	Inside Unit 3 scrubber building	Steel	2001	Floor drains direct spills to wastewater	Scrubber knife gate hydraulic reservoir
185	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
186	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
187	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
188	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
189	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
190	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
191	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
192	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
193	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
194	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
195	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
196	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
197	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
198	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
199	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
200	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
201	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
202	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
203	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
204	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
205	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
206	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
207	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
208	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
209	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
210	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
211	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
212	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
213	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
214	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
215	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
216	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
217	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
218	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
219	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
220	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
221	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
222	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
223	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
224	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
225	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
226	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
227	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
228	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
229	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
230	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
231	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
232	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
233	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
234	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
235	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
236	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
237	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
238	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
239	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
240	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
241	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
242	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
243	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
244	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
245	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
246	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
247	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
248	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
249	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
250	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
251	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
252	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
253	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
254	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
255	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
256	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
257	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
258	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
259	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
260	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
261	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
262	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
263	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
264	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
265	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
266	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
267	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
268	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
269	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
270	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
271	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
272	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
273	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
274	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
275	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
276	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
277	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
278	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
279	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
280	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
281	CIU		110	Lube oil	Base of Unit 1A Induced Draft Fan	Base of Unit 1A Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 1A Induced Draft (ID) Fan Lube oil Reservoir
282	CIU		110	Lube oil	Base of Unit 1B Induced Draft Fan	Base of Unit 1B Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 1B Induced Draft (ID) Fan Lube oil Reservoir
283	CIU		110	Lube oil	Base of Unit 2A Induced Draft Fan	Base of Unit 2A Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 2A Induced Draft (ID) Fan Lube oil Reservoir
284	CIU		110	Lube oil	Base of Unit 2B Induced Draft Fan	Base of Unit 2B Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 2B Induced Draft (ID) Fan Lube oil Reservoir
285	CIU		110	Lube oil	Base of Unit 3A Induced Draft Fan	Base of Unit 3A Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 3A Induced Draft (ID) Fan Lube oil Reservoir
286	CIU		110	Lube oil	Base of Unit 3B Induced Draft Fan	Base of Unit 3B Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 3B Induced Draft (ID) Fan Lube oil Reservoir
287	CIU		110	Lube oil	Base of Unit 1A booster fan	Base of Unit 1A booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 1A Boster Fan lube oil reservoir
288	CIU		110	Lube oil	Base of Unit 1B booster fan	Base of Unit 1B booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 1B Boster Fan lube oil reservoir
289	CIU		110	Lube oil	Base of Unit 2A booster fan	Base of Unit 2A booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 2A Boster Fan lube oil reservoir
290	CIU		110	Lube oil	Base of Unit 2B booster fan	Base of Unit 2B booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 2B Boster Fan lube oil reservoir
291	CIU		110	Lube oil	Base of Unit 3A booster fan	Base of Unit 3A booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 3A Boster Fan lube oil reservoir
292	CIU		110	Lube oil	Base of Unit 3B booster fan	Base of Unit 3B booster fan	Steel	191	Trench drains to wastewater treatment	Unit 3B Boster Fan lube oil reservoir
293	CIU		55	Propylene glycol	Transfer House #7 Rob Run Coal Conveyor	Transfer House #7 Rob Run Coal Conveyor	Steel	2002	Containment Pallet	55-gal drum on containment pallet
294	CIU		500	Propylene glycol	Transfer House #6 Rob Run Coal Conveyor	Transfer House #6 Rob Run Coal Conveyor	DW-Poly	2002	Double Walled Tank	
295	CIU		500	Propylene glycol	Transfer House #5 Rob Run Coal Conveyor	Transfer House #5 Rob Run Coal Conveyor	DW-Poly	2002	Double Walled Tank	
296	CIU		100	Propylene glycol	Transfer House #3 Rob Run Coal Conveyor	Transfer House #3 Rob Run Coal Conveyor	DW-Poly	2002	Double Walled Tank	
297	Removed		2,500	Nalco 7320	Biocide Building	Biocide Building	Poly	2002	Floor drains to WWT	Biocide - REMOVED
298	CIU		27,600	Transformer Oil	Outside Station, East Side Of Unit #1	Outside Station, East Side Of Unit #1	Steel	2005	Concrete containment	#1 Main Transformer
299	CIU	17-2619	16,570	New Lube Oil	299 (17-2619)	Station Basement	Steel/Conc	1972	Trench drains to wastewater treatment	
300	CIU	17-2618	16,570	Dirty Lube Oil	300 (17-2618)					
301	CIU		250	Lube oil	Inside station, unit #1	Inside station, unit #1	Steel	1971	Trench drains to wastewater treatment	Unit #1 Seal Oil Tank
302	CIU		250	Lube oil	Inside station, unit #2	Inside station, unit #2	Steel	1971	Trench drains to wastewater treatment	Unit #2 Seal Oil Tank
303	CIU		250	Lube oil	Inside station, unit #3	Inside station, unit #3	Steel	1971	Trench drains to wastewater treatment	Unit #3 Seal Oil Tank
304	CIU		200	Propylene glycol	Crusher House	Crusher House	DW-Poly	2004	Double Walled Tank	
305	CIU		100	Propylene glycol	Reclaim Tunnel	Reclaim Tunnel	DW-Poly	2004	Double Walled Tank	
306	Removed		2,000	No. 2 fuel oil	Crusher House	Crusher House	DW-steel	2004	Double Walled Tank	Removed from service 2014
307	CIU		200	Hydraulic Oil	Inside Station, 1st floor, Unit #1	Inside Station, 1st floor, Unit #1	Steel	2005	Floor drains direct spills to oil/water separator	Unit #1 EH System - Turbine control
308	CIU		200	Hydraulic Oil	Inside Station, 1st floor, Unit #2	Inside Station, 1st floor, Unit #2	Steel	2007	Floor drains direct spills to oil/water separator	Unit #2 EH System - Turbine control
309	CIU		200	Hydraulic Oil	Inside Station, 1st floor, Unit #3	Inside Station, 1st floor, Unit #3	Steel	2006	Floor drains direct spills to oil/water separator	Unit #3 EH System - Turbine control
310	Removed		1,000	Gasoline	#1 Stack Out area of SWP	#1 Stack Out area of SWP	Steel	2008	Drains to grit chambers in solid waste processing	Owned by Bruceton Petroleum Being Removed
311	CIU		1,000	#2 Fuel Oil	Coal Handling Dozer Pad	Coal Handling Dozer Pad	Steel		Drains to ditch containment system in coal handling	Owned by Bruceton Petroleum
312	CIU		29,542	Transformer Oil	Adjacent to switchyard	Adjacent to switchyard	Steel	2011	below grade containment pit - no pump	New unit 3 Main Transformer
313	CIU		4,185	Transformer Oil	Adjacent to switchyard	Adjacent to switchyard	0	2011	below grade containment pit - no pump	New spare scrubber tranformer
314	CIU	17-2599	5,400	Sodium Hypochlorite	West of North Cooling Tower next to biocide building	West of North Cooling Tower next to biocide building	HDXLPE w/OR 100	~2012		Biocide treatment of cooling tower
315	CIU	17-2576	1,500	gasoline tank	#1 Stack Out pad at solid waste building	#1 Stack Out pad at solid waste building	DW-steel	2014	Double Walled Tank	
316	CIU		1,000	Diesel	#1 Stack Out pad at solid waste building	#1 Stack Out pad at solid waste building	DW-steel	2014	Double Walled Tank	Off Road Diesel
317	CIU			Lube oil	Lime unloading hydrualic skid	Lime unloading hydrualic skid	Steel	1995		
318	CIU	17-2635	900,000	Metal wash waters	Clarifier tank - Between Unit #2 and Unit #3 absorber	Clarifier tank - Between Unit #2 and Unit #3 absorber	Steel	2002	Drains to waste water treatment	Metal wash capture process
319	CIU	17-2600	37,500	Metal wash waters	Reaction tank - Between Unit #2 and Unit #3 absorber	Reaction tank - Between Unit #2 and Unit #3 absorber	Steel	2013	Drains to waste water treatment	Metal wash capture process
320	CIU		400	Nalco Core Shell 71	Organo sulfide skid - clarifier tank building	Organo sulfide skid - clarifier tank building	Poly	2013	Drains to waste water treatment	Metal wash capture process
321	CIU		400	Nalco 1689	Polymer feed skid clarifier tank building	Polymer feed skid clarifier tank building	Poly	2013	Drains to waste water treatment	Metal wash capture process
322	CIU		300	Propylene glycol (50	Coal Handling Dozer Pad	Coal Handling Dozer Pad	Poly tote		Drains to ditch containment system in coal handling	
323	CIU		1,000		diesel tank	diesel tank				
324	CIU	17-2611	250,000	DI water storage	Outside behind pretreatment	Outside behind pretreatment	ASTMA-285 GRC S	1972		
325	CIU	17-2575	250,000	U1 condensate stora	Outside behind pretreatment	Outside behind pretreatment	ASTM A-285 GRC	1972		
326	CIU	17-2597	250,000	U2 condensate stora	Outside behind pretreatment	Outside behind pretreatment	ASTM A-285 GRC	1973		

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
327	CIU	17-2592	250,000	U3 condensate stora	Outside behind pretreatment	Outside behind pretreatment	ASTM A-285 GRC	1974		
328	CIU	17-2603	20,000	U1 cooling H2O hea	8th floor	8th floor	ASTM A-285 GRC	1972		
329	CIU	17-2589	20,000	U2 cooling H2O hea	8th floor	8th floor	ASTM A-285 GRC	1972		
330	CIU	17-2594	20,000	U3 cooling H2O hea	8th floor	8th floor	ASTM A-285 GRC	1973		
331	CIU	17-2595	10,000	Potable H2O	14th floor	14th floor	ASTM A-285 GRC	1972		
332	CIU	17-2602	15,000	Fire Water	14th floor	14th floor	ASTM A-285 GRC	1972		
333	CIU	17-2640	93,750	U1 DA storage tank	11th or 13th floor?	11th or 13th floor?	A515 GR70 Steel	1972		
334	CIU	17-2636	93,750	U2 DA storage tank	11th or 13th floor?	11th or 13th floor?	A515 GR70 Steel	1973		
335	CIU	17-2586	93,750	U3 DA storage tank	11th or 13th floor?	11th or 13th floor?	A515 GR70 Steel	1974		
336	CIU	17-2624	4,500	RO storage tank	1st floor	1st floor	Fiberglass	1972		
337	CIU	17-2621	7,500	Aux boiler DA tank	5th floor	5th floor	Steel	1972		
338	CIU			cooling tower makeu	Adjacent to cooling towers	Adjacent to cooling towers				
339	CIU			cooling tower makeu	Adjacent to cooling towers	Adjacent to cooling towers				
340	CIU	17-2626	5,000	condensate return ta	2nd floor U1	2nd floor U1	ASTM A-285 GRC	1972		Not used but does contain H2O
341	CIU	17-2588	10,000	Filtered water			Steel	1972		Flows through in pretreatment
342	CIU	17-2578	25,000	clarifier tank	1st floor pretreatment	1st floor pretreatment	Steel	1972		Not used but does contain H2O
343	CIU	17-2628	25,000	clarifer tank	1st floor pretreatment	1st floor pretreatment	Steel	1972		Not used but does contain H2O
344	CIU	17-2584	107,215	clearwell tank	1st floor pretreatment	1st floor pretreatment	Concrete	1972		Not used but does contain H2O
345	CIU	17-2581	1,500	RO equalization tank	Pretreatment south of RO	Pretreatment south of RO	HDPE	2011		
346	CIU	17-2614	1,500	U1 Drip & Drain Tan	back of building	back of building	ASTM A-285 GRC	1972		
347	CIU	17-2587	1,500	U2 Drip & Drain Tan	back of building	back of building	ASTM A-285 GRC	1973		
348	CIU	17-2617	1,500	U3 Drip & Drain Tan	back of building	back of building	ASTM A-285 GRC	1974		
349	CIU	17-2634	1,700	TruckWash Solid W	Water	Water	Polyethylene	1992		
350	CIU	17-3352	9,850	Emulsified Sulfur	Lime Silo #1	Lime Silo #1	Fiberglass Reinforced Plastic	2016	Drains to retention basin	
351	CIU	17-3350	9,850	Emulsified Sulfur	Lime Silo #2	Lime Silo #2	Fiberglass Reinforced Plastic	2016	Drains to retention basin	
352	CIU	17-3351	4,997	Nalco Core Shell 71	Waste Building (East End)	Waste Building (East End)	Polypropylene	2016	Sealed, self contained building floor	Corrected Volume
353	CIU	17-3402	3,135	Propylene glycol	No. 2 condenser pit	No. 2 condenser pit	Polyethylene	2016	Floor drains direct spills to wastewater	Replaced tank 126
354	CIU	17-3772	9,402	Hydrogen Peroxide 3	Landfill Leachate system	landfill	DW XLPE	9/3/2019		
355	CIU	17-3775	7,087	Sodium Hydroxide la	Landfill Leachate system	landfill	DW XLPE	9/3/2019		
356	CIU	17-3774	7,087	Nalmet 1689 Organ	Landfill Leachate system	landfill	DW XLPE	9/3/2019		
357	CIU	17-3773	7,087	Ferric Chloride	Landfill Leachate system	landfill	DW XLPE	9/3/2019		
358	CIU		700	ULS Diesel	U2 Circ H20 Diesel Fire Pump	U2 Circ H20	DW Steel	2019		

HARRISON POWER STATION ICP

Section III – Annexes

Annex 1 – Facility and Locality Information

a. Facility maps

- USGS Station Location Map
- Ash Disposal Area Map

b. Facility drawings

- SPCC Plan Station Diagram

c. Facility description/layout, including identification of facility hazards and vulnerable resources and populations on and off the facility which may be impacted by an incident

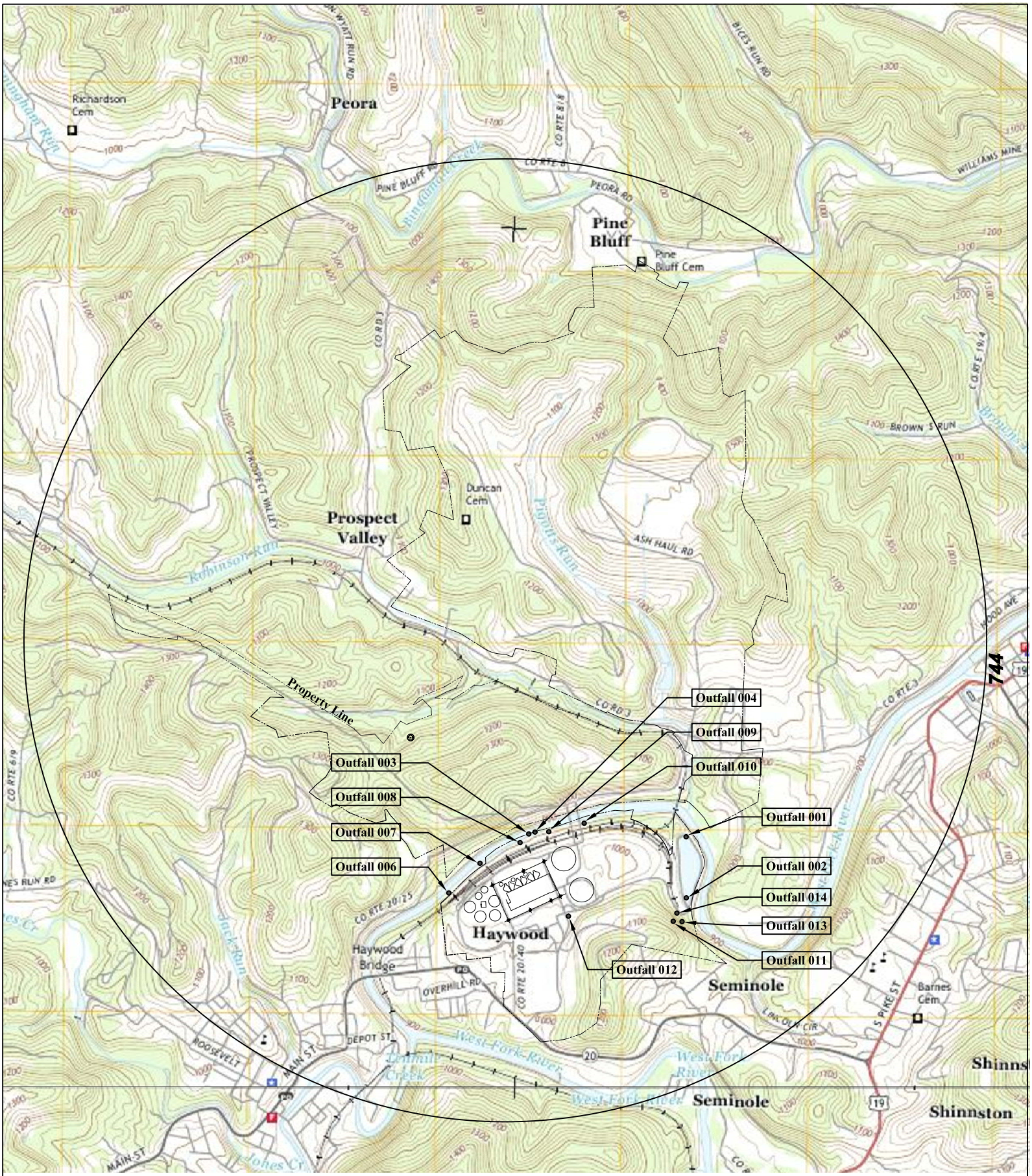
- Material Inventory
- Tank List

d. Aboveground Storage Tank (AST) Registration Information

Tank Registration Numbers

Tank Specific Information

SDS Information



Monongahela Power Company

NATIONAL POLLUTANT DISCHARGE
ELIMINATION SYSTEM
WATER POLLUTION CONTROL PERMIT

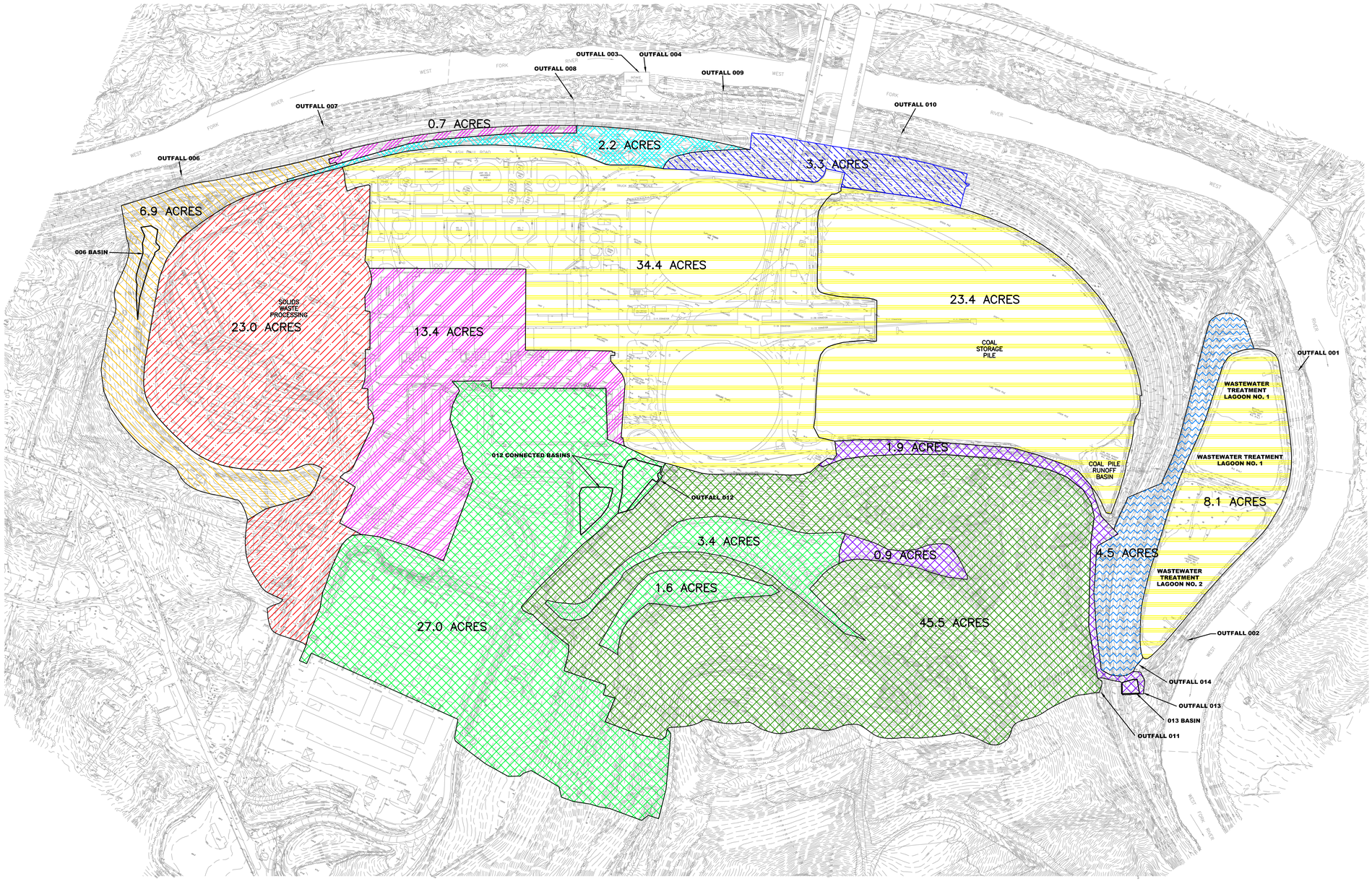
LOCATION MAP

REPRODUCED FROM U.S.G.S. MAP
SHINNSTON & CLARKSBURG WV QUADRANGLES

NOTE: AREA WITHIN 1/4 MILE OF PROPERTY IS ENCLOSED WITHIN A CIRCLE. MUNICIPAL WATER SYSTEM IS AVAILABLE TO THE TOWN OF HAYWOOD

Sketch PM01282021

IF BAR IS NOT 1 INCH, THIS DRAWING IS NOT TO SCALE



LEGEND

- AREA 001/002
- AREA 006
- AREA 007
- AREA 008
- AREA 010
- AREA 011 NEC
- AREA 012
- AREA 013
- AREA 014 NEC
- NO OUTLET

URS
1375 EUCLID AVE.
CLEVELAND, OHIO 44115

ISSUED FOR BIDDING — DATE — BY

ADDENDUM REVISIONS

ADDENDUM NO	ADDENDUM DATE	BY

ISSUED FOR CONSTRUCTION — DATE — BY

CONSTRUCTION REVISIONS

NO.	DESCRIPTION	DATE	BY
1	CHANGES BASED ON 2014 CONSTRUCTION	11/25/14	LDB
2	CHANGES BASED ON 2015 CONSTRUCTION	9/29/15	LDB

RECORD DRAWINGS — DATE — BY

STATE OF OHIO
LOUIS D. BURNOSKI
E-75236
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY: JPF	CHECKED BY: LDB
JOB NO 13816075	
SCALE 1" = 200'-0"	

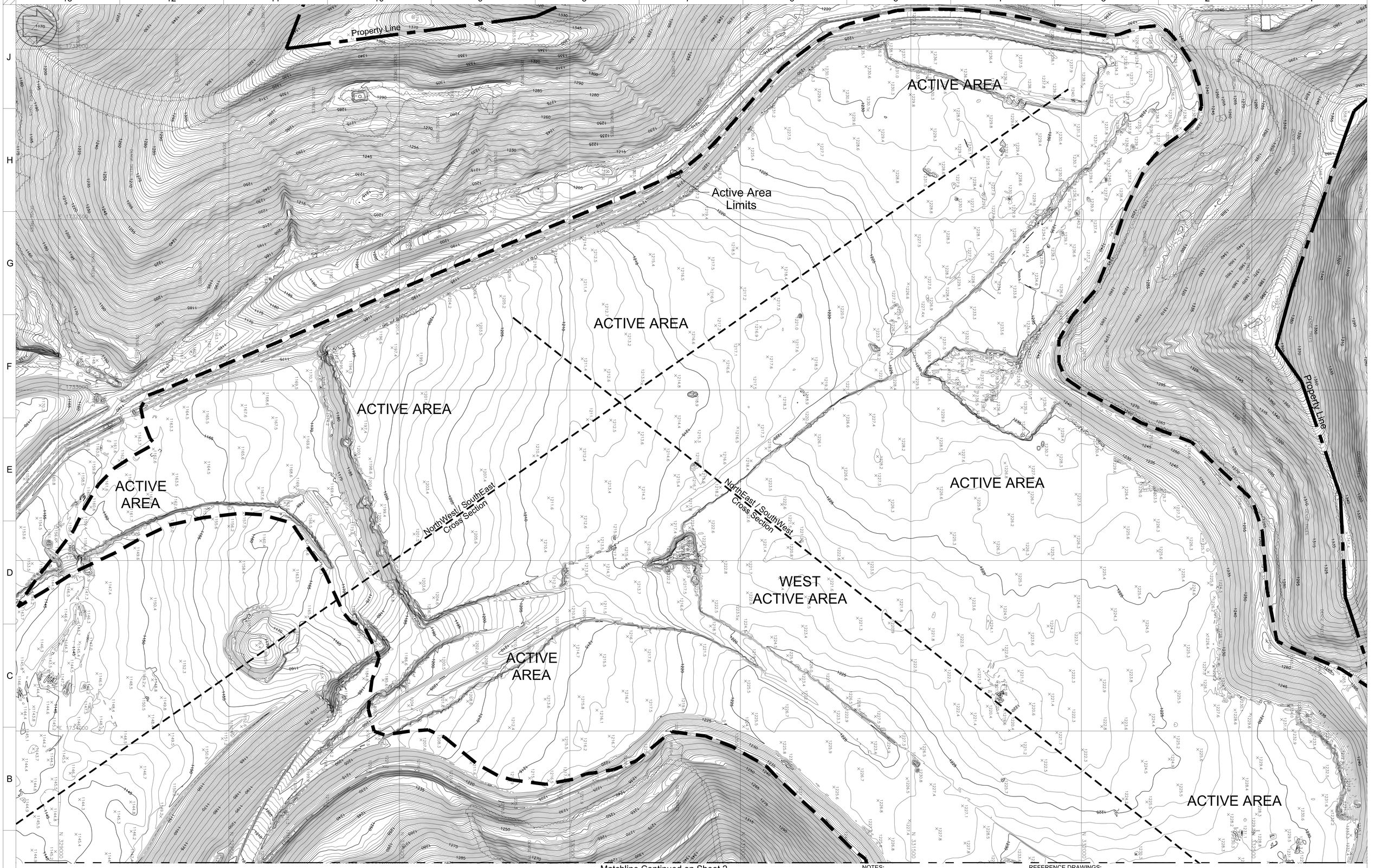
GRAPHIC SCALE

HARRI□ON
DRAINAGE MAP
□EP□EM□ER □□□□

FirstEnergy
□IR□□ENERGY
HARRI□ON □□A□ION

□□□□□□□□

K:\Projects\F\First Energy\13816075\DWGs\Overall Plan\C0100 – 2015–OVERALL DRAINAGE MAP.dwg User:louis_burnoski Sep 29, 2015 – 1:54pm



NOTES:

1. COORDINATES SHOWN ARE BASED ON THE WEST VIRGINIA STATE PLANE COORDINATE SYSTEM, NORTH ZONE NAD 83.
2. CONTOUR INTERVALS ARE EVERY 1 FOOT.
3. KII - KUCERA INTERNATIONAL INCORPORATED Harrison 2020.dwg KII 3D ELECTRONIC FILE

REFERENCE DRAWINGS:

506-925 - PROPERTY PLAN
C8930001 - BOUNDARY ADJ. PLAN

FUNCTIONAL LOCATION NO. _____

Last .Net editor version: BECM v1.3

REVISION	DR	CHKD	APPD	DATE

PROJECT NUMBER

746

REFERENCE DRAWINGS		ENGINEERING	DATE
DWG. NO. C89503328-2	TITLE CCB ACTIVE LANDFILL 2020 TOPOGRAPHY MAPPING	DR KII/RDC	04/28/2020
C89503328-3	CCB ACTIVE LANDFILL CROSS SECTIONS	CHKD PEM	04/29/2020
C89503328-4	CCB ACTIVE LANDFILL CROSS SECTION	APPD PEM	04/29/2020
C89503328-5	CCB ACTIVE LANDFILL CROSS SECTION	SCALE 1" = 100'-0"	

INITIAL PROJECT # 47952452

THIS IS AN AutoCAD DRAWING - DO NOT MANUALLY REVISE

CCB ACTIVE LANDFILL
2020 TOPOGRAPHIC MAPPING
DATE OF AERIAL PHOTOGRAPHY 3-13-2020

FACILITY HARRISON UNIT COMMON

Monongahela Power Company

DWG. NO. C89503328-1

REV.

1. THE BASE TOPOGRAPHIC INFORMATION SHOWN WAS OBTAINED FROM THE APPLICABLE SHEETS OF DRAWING NO. C8950060. THE MAPPING SHOWN ON DRAWING NO. C8950060 WAS PREPARED BY L. ROBERT KIMBALL & ASSOCIATES AND IS BASED ON AERIAL PHOTOGRAPHY DATED APRIL 9, 1990 AND UPDATED FROM PHOTOGRAPHY DATED MAY 14, 1996.
2. STORAGE TANK LOCATIONS ARE BASED ON APSC DRAWING NO. 513-941, REV. 2 PREPARED BY MICHAEL BAKER, JR AND UPDATED INFORMATION PROVIDED BY ALLEGHENY ENERGY SUPPLY COMPANY, LLC, IN 2001.

LEGEND

- A1HR – ABOVE GROUND STORAGE TANKS
- UG-2HR – UNDERGROUND STORAGE TANKS
- UNDERGROUND PIPE AND DIRECTION OF FLOW
- MANHOLE (SOLID COVER)
- INLET (SEALED AT SURFACE)
- INLET (OPEN)
- CONCRETE TRENCH AND DIRECTION OF FLOW
- ROOF DRAIN
- IMPERVIOUS SURFACE

PLAN

SCALE: 1" = 100'

0 100 200 300 FEET

Last Edit: Aug. 22, 2002

ORBITAL ENGINEERING, INC
PITTSBURGH • CHICAGO • CLEVELAND • PHILADELPHIA
OAK BROOK • TOLEDO • CHARLESTON, WV • BIRMINGHAM

PROJECT 01-7296

Monongahela Power Company

FUNCTIONAL LOCATION NO.

Last Net editor version: BECM v1.3

THIS IS AN AutoCAD DRAWING - DO NOT MANUALLY REVISE

REVISION	DR	CHKD	APPD	DATE
A	RC	GH	GH	8/28/02
B	RC	GH	GH	9/21/03
C	RC	GH	GH	9/27/07
D	RC	GH	GH	10/2/10
E	RC	GH	GH	11/24/2014
F	RC	GH	GH	05/25/2016
G	RC	MJ	MJ	03/05/2018
H	RC	MJ	MJ	06/28/2018

REVISION	PROJECT NUMBER
H – ADDED TANK A354HR IN WASTE BUILDING REMOVED TANK A98HR AND RELOCATED TANK A167HR TO WHERE TANK A88HR WAS	
G – ADDED TANK A353HR	
F – ADDED TANKS A350HR, A351HR AND A352HR. REMOVED TANK A126HR	
E – UPDATED & ADDED TANKS A312HR THRU A316HR	

REFERENCE DRAWINGS		ENGINEERING	DATE
DWG. NO.	TITLE	DR	
		CHKD	
		APPD	
		SCALE NONE	

SPILL PREVENTION
CONTROL AND COUNTERMEASURES
FACILITY DIAGRAM

FACILITY HARRISON UNIT COMMON

FirstEnergy GENERATION, LLC

DWG. NO.

REV. H

LEGEND

- TREE/SHRUB LINE
- DRAINAGE CHANNEL
- EDGE OF WATER
- LIMOL
- TSL — TOTAL SURVEY LIMITS
- UML — UTILITY MAPPING LIMITS
- GAS — GAS UTILITY
- ELEC — ELECTRIC UTILITY
- CHEM — CHEMICAL CONDUIT
- STM — STORM UTILITY
- LCH — LEACHATE PIPE
- GUARDRAIL
- EDGE OF ROAD
- ROAD CENTERLINE
- RAILROAD
- 967.5 — SPOT ELEVATION
- PROPOSED DRAINAGE CHANNEL
- 990 — PROPOSED CONTOURS
- PROPOSED STORM UTILITY
- PROPOSED LEACHATE CONVEYANCE PIPE CENTERLINE
- OHE — PROPOSED OVERHEAD ELECTRIC LINE
- BORING START/STOP INDICATOR
- CFS — CFS — COMPOST FILTER SOCK
- PROPOSED MANHOLE
- CLEAN OUT
- COMBINATION AIR RELEASE VALVE / AIR VACUUM VALVE
- ISOLATION VALVE
- INLET PROTECTION
- STORMWATER INLET
- ELECTRIC PULLBOX
- ELECTRICAL BOX
- SIGN
- LIGHT POLE

MAPPING NOTE:

1. EXISTING TOPOGRAPHY SHOWN IS A COMBINATION OF FLOWN TOPOGRAPHY DATED APRIL 10, 2018 OBTAINED BY GAI CONSULTANTS INC., FLOWN TOPOGRAPHY DATED APRIL 8, 1990 OBTAINED BY L. ROBERT KIMBALL AND ASSOCIATES, AND GROUND SURVEY PERFORMED BY GAI CONSULTANTS IN OCTOBER 2018.
2. A UTILITY MAPPING INVESTIGATION WAS PERFORMED BY THG GEOPHYSICS IN MARCH 2019 TO LOCATE AND MAP SUBSURFACE UTILITIES AT SEVERAL AREAS ACROSS THE PROJECT SITE.

SCALE: 1" = 200'

200 0 200 400

ISSUED FOR CONSTRUCTION
06/07/2019

gai consultants

FUNCTIONAL LOCATION NO. _____

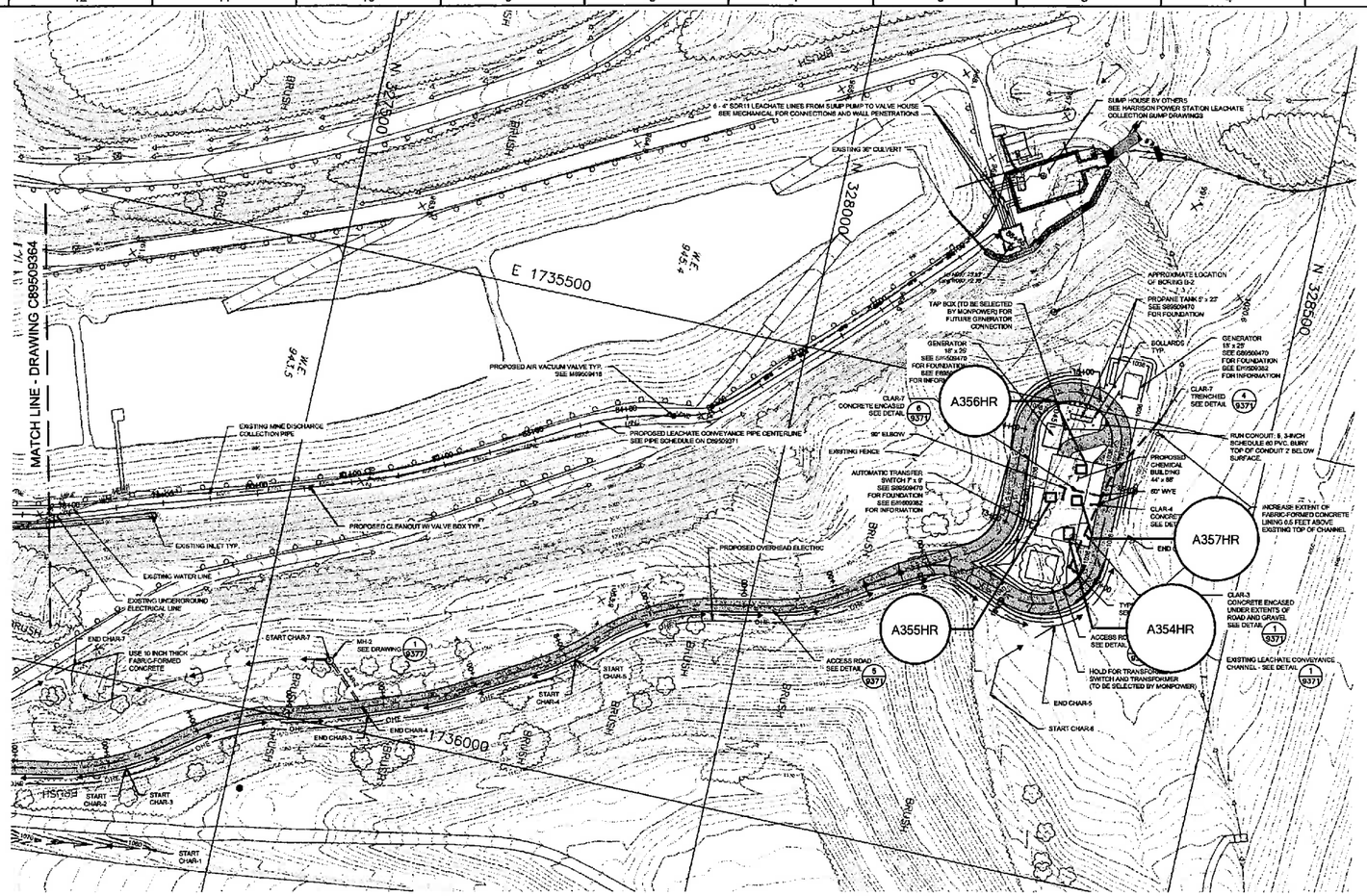
REFERENCE DRAWINGS	
C8950080	1990 TOPOGRAPHIC MAPPING
C8950129	SED. POND NO. 1 EXPANSION FINAL PLAN

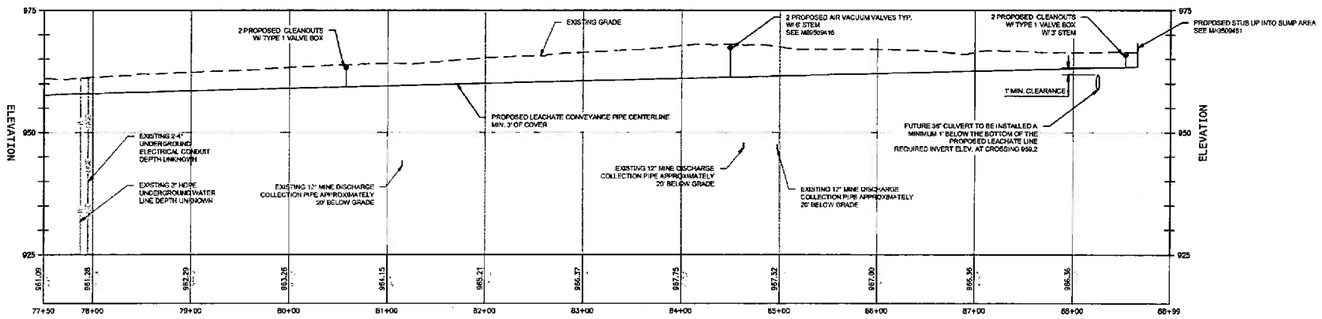
	ENGINEERING	DATE
BY	PANESCIA	06/7/2019
CHK	CORTESIN	06/7/2019
APVD	KUMOKMW	06/7/2019
SCALE	AS NOTED	

THIS IS AN AutoCAD DRAWING - DO NOT MANUALLY REVISE

CIVIL
LEACHATE CONVEYANCE
OVERALL LEACHATE CONVEYANCE PIPE LAYOUT
FACILITY HARRISON UNIT 01

MonPower — DWG. NO. C89509358 — REV.





Leachate Alignment PROFILE
SCALE: 1"=50' HORIZ.
1"=10' VERT.

MAPPING NOTE:

1. EXISTING TOPOGRAPHY SHOWN IS A COMBINATION OF FLOWN TOPOGRAPHY DATED APRIL 13, 2016 OBTAINED BY GAI CONSULTANTS INC., FLOWN TOPOGRAPHY DATED APRIL 9, 1990 OBTAINED BY L. ROBERT KIMBALL AND ASSOCIATES, AND GROUND SURVEY PERFORMED BY GAI CONSULTANTS IN OCTOBER 2016.
2. CONTRACTOR SHALL VERIFY UTILITY LOCATIONS IN THE FIELD AND COORDINATE WITH OWNER IN THE EVENT OF ANY DISCREPANCIES.

CHANNEL AND CULVERT NOTE:

1. SEE SHEET C89509371 FOR CHANNEL SCHEDULE AND DETAILS.
2. SEE SHEET C89509371 FOR CULVERT SCHEDULE AND DETAILS.

GRADING NOTE:

1. GRADING FOR ACCESS ROAD NOT SHOWN AS FIELD CONDITIONS HAVE BEEN CHANGED. CONTRACTOR TO GRADE PER DETAIL 5/9371

EXCAVATION NOTE:

1. AN ADDITIONAL EXISTING UNDERGROUND ELECTRIC LINE, NOT SHOWN ON THESE PLANS, MAY BE ENCOUNTERED BETWEEN STATIONING 79+00 AND 88+00.
2. CONTRACTOR SHALL FIELD VERIFY LOCATION PRIOR TO EXCAVATION IN THESE AREAS.

EROSION AND SEDIMENT CONTROL NOTE:

1. CONTRACTOR SHALL PROTECT AND MAINTAIN CHANNELS AND POND FROM ACCUMULATION OF SEDIMENT. ANY SEDIMENT TO BE REMOVED BY CONTRACTOR.

LEGEND

- TREES/BUG LINE
- DRAINAGE CHANNEL
- EDGE OF WATER
- BENCH
- TSL — TOTAL SURVEY LIMITS
- UML — UTILITY MAPPING LIMITS
- GAS — GAS UTILITY
- ELEC — ELECTRIC UTILITY
- CHEM — CHEMICAL CONDUIT
- STORM — STORM UTILITY
- LEACHATE PIPE
- SUBTERRANEAN
- EDGE OF ROAD
- ROAD CENTERLINE
- RAILROAD
- 867.5 X — SPOT ELEVATION
- PROPOSED DRAINAGE CHANNEL
- 990 — PROPOSED CONTOURS
- PROPOSED STORM UTILITY
- PROPOSED LEACHATE CONVEYANCE PIPE CENTERLINE
- OHE — PROPOSED OVERHEAD ELECTRIC LINE
- BORING START/STOP INDICATOR
- CFS — COMPOST FILTER SOCK
- PROPOSED MANHOLE
- CLEAN OUT
- COMBINATION AIR RELEASE VALVE / AIR VACUUM VALVE
- ISOLATION VALVE
- RIP RAP PROTECTION
- STORMWATER INLET
- ELECTRIC PULLBOX
- ELECTRICAL BOX
- SIGN
- LIGHT POLE

PROFILE NOTES

1. PROPOSED PIPE ELEVATIONS SHOWN ON THE PROFILE REPRESENT THE OUTSIDE TOP OF THE PIPE.
2. ELEVATIONS SHOWN FOR EXISTING UTILITY LINEWORK ARE APPROXIMATE. ELEVATIONS NOT OBTAINED THROUGH THIS GEOPHYSICS UTILITY INVESTIGATION HAVE BEEN OBTAINED FROM VARIOUS RECORD DOCUMENTS FROM 1950 TO 2018 AND MAY NOT BE REPRESENTATIVE OF AS-BUILT DATA.
3. VERTICAL LINEWORK REPRESENTS UNKNOWN ELEVATIONS OF EXISTING UTILITY CROSSINGS ALONG THE PROPOSED STATIONING. LOCATIONS SHOWN ARE APPROXIMATE, CONTRACTOR TO FIELD VERIFY.

SCALE: 1" = 50'
50 0 50 100

ISSUED FOR CONSTRUCTION
05/31/2019

FUNCTIONAL LOCATION NO. _____

gai consultants

REVISION	BY	CHKD	APVD	DATE

PROJECT NUMBER

REFERENCE DRAWINGS	
DWG NO.	TITLE
C91-56126	SED. POND NO. 1 EXPANSION EXCAVATION PLAN
C89509321	LEACHATE COLLECTION SUMP PROPOSED OVERALL

ENGINEERING	DATE
DR PANEKJA	04/30/2019
CHK CORTEMIN	04/01/2019
APP KULSINSKAW	04/01/2019
SCALE AS NOTED	

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CIVIL
LEACHATE CONVEYANCE
CONVEYANCE LINE - 7 OF 7

FACILITY HARRISON UNIT 01

MonPower — DWG NO. C89509365 — REV

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
1	Empty		10,000	NaOH	Inside Station, wastewater treatment area	Inside Station, wastewater treatment area	Steel	1971	Floor drains direct spills to wastewater	For demineralizer - decommissioned
2	OOS		325	NaOH	Inside Station, wastewater treatment area	Inside Station, wastewater treatment area	Steel	1971	Floor drains direct spills to wastewater	OUT OF SERVICE
3	Removed		10,000	H_2SO_4	Inside Station, Water Treatment Area, 1st Floor	Inside Station, Water Treatment Area, 1st Floor	Steel	1991	Floor drains direct spills to wastewater	For demineralizer - decommissioned 7/2014 REMOVED 2015
4	CIU	17-2610	10,000	H_2SO_4	Outside, South end by Cooling tower pumphouse	Outside, South end by Cooling tower pumphouse	Steel	1973	Concrete Dike	circulating water treatment for cooling tower
5	Removed		1,000	Anhydrous Ammonia	BETWEEN CONDENSATE TANKS	BETWEEN CONDENSATE TANKS	Steel	1974	DITCH DIRECTS SPILLS TO W. WATER	REMOVED 1996-7?
6	Removed	17-2633	12,000	Coal Flow Additive	Behind #1 UnitT, Under gas duct	Behind #1 UnitT, Under gas duct	Fiberglass	1980	Floor drains direct spills to wastewater	Aqueous blend of Alkyl Aryl Polyoxyethanol (Aquashed 175) REMOVED 2015
7	Removed	17-2608	12,000	Coal Flow Additive	Behind #3 Unit, under gas duct	Behind #3 Unit, under gas duct	Fiberglass	1980	Floor drains direct spills to wastewater	Aqueous blend of Alkyl Aryl Polyoxyethanol (Aquashed 175) REMOVED 2015
8	Removed	17-2579	12,000	Coal Flow Additive	Behind #3 Unit, under gas duct	Behind #3 Unit, under gas duct	Fiberglass	1980	Floor drains direct spills to wastewater	Aqueous blend of Alkyl Aryl Polyoxyethanol (Aquashed 175) REMOVED 2015
9	CIU		1,200	Propylene Glycol	Inside Station, Elev.1046, Col. G-6	Inside Station, Elev.1046, Col. G-6	Steel	1971	Floor drains direct spills to oil/water separator	Boiler Head Tank
10	CIU		1,200	Propylene Glycol	Inside Station, Elev. 1046, Col. G-14	Inside Station, Elev. 1046, Col. G-14	Steel	1971	Floor drains direct spills to oil/water separator	Boiler Head Tank
11	CIU		1,200	Propylene Glycol	Inside Station, Elev. 1046, Col. G-22	Inside Station, Elev. 1046, Col. G-22	Steel	1971	Floor drains direct spills to oil/water separator	Boiler Head Tank
12	CIU		500	Propylene Glycol	Transfer House 4	Transfer House 4	2-Wall Poly	2002	double walled tank	
13	Removed		1,000	Propylene Glycol	Transfer House 6	Transfer House 6	Steel		None	REMOVED - 2002
14	CIU	17-2622	4,000	Nalco-3DT121	Inside cooilng tower treatment bldg.	Inside cooilng tower treatment bldg.	Polyethylene	1995	Sealed, self contained building floor	Cooling tower dispersant
15	CIU	17-2637	750,000	Metal wash clean eff	Between #3 Unit & Lime Silos	Between #3 Unit & Lime Silos	Steel	1971	Area drains to wastewater treatment	Final effluent treated metal wash
16	CIU		300	#2 Fuel Oil	Inside Station, Elev. 978 Near Col. K-9	Inside Station, Elev. 978 Near Col. K-9	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 Emergency Generator
17	CIU		300	#2 Fuel Oil	Inside Station, Elev. 978 Near Col. K-9	Inside Station, Elev. 978 Near Col. K-9	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 Emergency Generator
18	CIU		200	#2 Fuel Oil	Inside Screen House	Inside Screen House	Steel	1971	Concrete containment	Emergency Fire Pump
19	Removed		125,000	#2 Fuel Oil	Between Unit #3 & Lime Silos	Between Unit #3 & Lime Silos	Steel		Concrete Dike	Decommissioned REMOVED 2015
20	CIU	17-2605	4,000	Kerosene	Between Cooling Towers	Between Cooling Towers	Steel	1987	Concrete Dike	
21	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col.B-4	Inside Station, Elev. 978, Col.B-4	Steel	1974	Floor drains direct spills to oil/water separator	BFP 1A Turbine Oil Reservior
22	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-6	Inside Station, Elev. 978, Col. B-6	Steel	1974	Floor drains direct spills to oil/water separator	BFP 1B Turbine Oil Reservior
23	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-12	Inside Station, Elev. 978, Col. B-12	Steel	1974	Floor drains direct spills to oil/water separator	BFP 2A Turbine Oil Reservior
24	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-14	Inside Station, Elev. 978, Col. B-14	Steel	1974	Floor drains direct spills to oil/water separator	BFP 2B Turbine Oil Reservior
25	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-20	Inside Station, Elev. 978, Col. B-20	Steel	1974	Floor drains direct spills to oil/water separator	BFP 3A Turbine Oil Reservior
26	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. B-22	Inside Station, Elev. 978, Col. B-22	Steel	1974	Floor drains direct spills to oil/water separator	BFP 3B Turbine Oil Reservior
27	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. TB-9	Inside Station, Elev. 978, Col. TB-9	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 Soot Blower Air Compressor - Lube Oil
28	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. TB-10	Inside Station, Elev. 978, Col. TB-10	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 Soot Blower Air Compressor - Lube Oil
29	CIU		800	Equipment Oil	Inside Station, Elev. 978, Col. TB-17	Inside Station, Elev. 978, Col. TB-17	Steel	1971	Floor drains direct spills to oil/water separator	Unit #3 Soot Blower Air Compressor - Lube Oil
30	CIU	17-2590	12,200	Equipment Oil	30 (17-2590)	Inside Station, Under Unit #1 Turbine	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 Main Turbine Reservoir
31	CIU	17-2598	12,200	Equipment Oil	31 (17-2598)	Inside Station, Under Unit #2 Turbine	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 Main Turbine Reservoir
32	CIU	17-2629	12,200	Equipment Oil	32 (17-2629)	Inside Station, Under Unit #3 Turbine	Steel	1971	Floor drains direct spills to oil/water separator	Unit #3 Main Turbine Reservoir
33	CIU		932	Equipment Oil	Inside Station, 1st Floor, Unit #1	Inside Station, 1st Floor, Unit #1	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 Turbine Oil Purifier (Bowser)
34	CIU		932	Equipment Oil	Inside Station, 1st Floor, Unit #2	Inside Station, 1st Floor, Unit #2	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 Turbine Oil Purifier (Bowser)
35	CIU		932	Equipment Oil	Inside Station, 1st Floor, Unit #3	Inside Station, 1st Floor, Unit #3	Steel	1971	Floor drains direct spills to oil/water separator	Unit #3 Turbine Oil Purifier (Bowser)
36	Removed		300	Hydraulic Oil	Inside Station, Elev. 1000, Col. A-3	Inside Station, Elev. 1000, Col. A-3	Steel	1971	Floor drains direct spills to oil/water separator	Unit #1 E.H. System - Turbine Control - Removed 2005
37	Removed		300	Hydraulic Oil	Inside Station, Elev. 1000, Col. A-11	Inside Station, Elev. 1000, Col. A-11	Steel	1971	Floor drains direct spills to oil/water separator	Unit #2 E.H. System - Turbine Control - Removed 2007
38	Removed		300	Hydraulic Oil	Inside Station, Elev. 1000, Col. A-19	Inside Station, Elev. 1000, Col. A-19	Steel	1971	Floor drains direct spills to oil/water separator	Unit #3 E.H. System - Turbine Control - Removed 2006
39	CIU		1,000	Used Oil/Degreaser	Outside between cooling towers, beside make up pumps	Outside between cooling towers, beside make up pumps	Concrete	1971	Ditch Directs Spills To O/W Separator	From O/W Sep, Holding tank taken Tank 51 to be burned
40	CIU		27,600	Dielectric Oil	AP Switchyard	AP Switchyard	Steel	1971	none	Spare Transformer
41	CIU		29,900	Dielectric Oil	Outside Station, East Side Of Unit #2	Outside Station, East Side Of Unit #2	Steel	1972	Concrete Pit, manual pump to O/W seperator	Unit #2 Main Transformer
42	CIU		24,600	Dielectric Oil	Adjacent to HA switchyard	Adjacent to HA switchyard	Steel	1973	below grade containment pit - no pump	Spare Transformer
43	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #1	Outside Station, East Side Of Unit #1	Steel	1971	Concrete Pit, manual pump to O/W seperator	Unit #1 Auxiliary Transformer
44	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #2	Outside Station, East Side Of Unit #2	Steel	1973	Concrete Pit, manual pump to O/W seperator	Unit #2 Auxiliary Transformer
45	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #3	Outside Station, East Side Of Unit #3	Steel	1974	Concrete Pit, manual pump to O/W seperator	Unit #3 Auxiliary Transformer
46	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #1	Outside Station, East Side Of Unit #1	Steel	2005	Concrete Pit, manual pump to O/W seperator	Unit #1 Auxiliary Transformer
47	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #2	Outside Station, East Side Of Unit #2	Steel	2005	Concrete Pit, manual pump to O/W seperator	Unit #2 Auxiliary Transformer
48	CIU		2,880	Dielectric Oil	Outside Station, East Side Of Unit #3	Outside Station, East Side Of Unit #3	Steel	2005	Concrete Pit, manual pump to O/W seperator	Unit #3 Auxiliary Transformer
49	CIU		4,750	Dielectric Oil	South Side of Condensate Tanks	South Side of Condensate Tanks	Steel	2005	Concrete Pit, manual pump to O/W seperator	Reserve Transformer
50	CIU		4,750	Dielectric Oil	South Side of Condensate Tanks	South Side of Condensate Tanks	Steel	2005	Concrete Pit, manual pump to O/W seperator	Reserve Transformer
51	CIU		1,200	Waste Oil	Ash Pit, Unit #1	Ash Pit, Unit #1	Steel	1989	Concrete Dike	Burn Tank
52	Removed		100	Hazardous Waste O	Inside Station, Ash Pit, Unit #1	Inside Station, Ash Pit, Unit #1	Steel	1984	Concrete Dike	REMOVED - 2004
53	CIU	17-2625	12,000	#2 Fuel Oil	53 (17-2625)	Outside, Coal Handling	Steel	1990	Concrete Dike	
54	CIU		3,660	Dielectric Oil	Outside Station, East Side Of Unit #1	Outside Station, East Side Of Unit #1	Steel	2005	Concrete Pit	Scrubber Unit Transformer #1
55	CIU		3,660	Dielectric Oil	Outside Station, East Side Of Unit #2	Outside Station, East Side Of Unit #2	Steel	2005	Concrete Pit	Scrubber Unit Transformer #2
56	CIU		3,660	Dielectric Oil	Outside Station, East Side Of Unit #3	Outside Station, East Side Of Unit #3	Steel	2005	Concrete Pit	Scrubber Unit Transformer #3
57	CIU		4,185	Dielectric Oil	Outside Station, North Of Condensate Tanks	Outside Station, North Of Condensate Tanks	Steel	2005	Concrete Pit	Scrubber Reserve Transformer A
58	CIU		4,185	Dielectric Oil	Outside Station, North Of Condensate Tanks	Outside Station, North Of Condensate Tanks	Steel	2005	Concrete Pit	Scrubber Reserve Transformer B
59	Not Tank		250 Ton	Lime	In/Outside Solid Waste Prep Bldg.	In/Outside Solid Waste Prep Bldg.	Steel	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
60	Not Tank		250 Ton	Lime	In/Outside Solid Waste Prep Bldg.	In/Outside Solid Waste Prep Bldg.	Steel	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
61	Not Tank		250 Ton	Lime	In/Outside Solid Waste Prep Bldg.	In/Outside Solid Waste Prep Bldg.	Steel	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
62	Not Tank		95,425 Cu. F	Fly Ash	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
63	Not Tank		95,425 Cu. F	Fly Ash	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
64	Not Tank		95,425 Cu. F	Fly Ash	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	To Retention Basin	Solid Waste Prep Silo (dry material) - NOT A TANK
65	CIU	17-2580	1,290,000	Underflow Slurry	65	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Underflow (centrifuge feed) Tank (FGDs solids)
66	CIU	17-2613	1,290,000	Underflow Slurry	66	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Underflow (centrifuge feed) Tank (FGDs solids)
67	CIU	17-2638	1,290,000	Underflow Slurry	67	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Underflow (centrifuge feed) Tank (FGDs solids)
68	CIU		4,329,312	Waste Slurry	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel shell/conc.bo	1995	To Retention Basin	Thickener (FGD Solids)
69	CIU		4,329,312	Waste Slurry	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel shell/conc.bo	1995	To Retention Basin	Thickener (FGD Solids)
70	CIU		4,329,312	Waste Slurry	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel shell/conc.bo	1995	To Retention Basin	Thickener (FGD Solids)
71	CIU		4,329,312	Waste Slurry	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel shell/conc.bo	1995	To Retention Basin	Thickener (FGD Solids)
72	CIU	17-2596	596,000	Clarified Overflow Li	72	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Overflow Tank
73	CIU	17-2607	596,000	Clarified Overflow Li	73	Scrubber Waste Processing Area	Steel	1994	To Retention Basin	Thickener Overflow Tank
74	CIU	17-2577	1,400,000	Centrate	74	Scrubber Waste Processing Area	Steel	1995	To Retention Basin	Centrate Storage Tank
75	CIU	17-2583	1,400,000	Centrate	75	Scrubber Waste Processing Area	Steel	1995	To Retention Basin	Centrate Storage Tank
76	CIU		350	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Polymer feed tank for scrubber
77	CIU		350	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Polymer feed tank for scrubber
78	CIU		350	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Polymer feed tank for scrubber
79	CIU		350	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Polymer feed tank for scrubber
80	CIU	17-2627	2,000	NALCLEAR 7767	Inside Polymer Building	Inside Polymer Building	X-linked Polyethyle	1995	To Retention Basin	Bulk Polymer Storage Tank, Feeds 76-79
81	Not Tank		28,500 Ton	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	Sump to Retention Basin	Main Lime Storage Silo , Solid Material NOT A TANK
82	Not Tank		28,500 Ton	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Concrete	1995	Sump to Retention Basin	Main Lime Storage Silo , Solid Material NOT A TANK
83	CIU	17-2615	1,000,000	Water	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Make-up water tank for scrubber
84	CIU	17-2593	100,000	Water	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Seal water tank for scrubber
85	Not Tank		3,631 Cu. Ft.	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Air Lime Unloading Surge Silo, Solid Material NOT A TANK
86	Not Tank		3,631 Cu. Ft.	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Air Lime Unloading Surge Silo, Solid Material NOT A TANK
87	Not Tank		3,631 Cu. Ft.	Lime	Scrubber Waste Processing Area	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Air Lime Unloading Surge Silo, Solid Material NOT A TANK
88	CIU	17-2616	363,366	Scrubber Process Fl	88	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Absorber lime slurry feed tank
89	CIU	17-2641	363,366	Scrubber Process Fl	89	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Absorber lime slurry feed tank
90	CIU	17-2609	363,366	Scrubber Process Fl	90	Scrubber Waste Processing Area	Steel	1995	Sump to Retention Basin	Absorber lime slurry feed tank
91	CIU	17-2623	109,000	Lime Slurry	91	Inside lime silo	Steel	1995	Sump to Retention Basin	Lime slurry transfer tank
92	CIU	17-2612	109,000	Lime Slurry	92	Inside lime silo	Steel	1995	Sump to Retention Basin	Lime slurry transfer tank
93	CIU	17-2630	109,000	Lime Slurry	93	Inside lime silo	Steel	1995	Sump to Retention Basin	Lime slurry transfer tank
94	CIU	17-2582	109,000	Lime Slurry	94	Inside lime silo	Steel	1995	Sump to Retention Basin	Lime slurry transfer tank
95	CIU		275	#2 Fuel Oil	Inside Elec. Eqmt Rm(SW corner)	Inside Electrical Equipment Room (SW corner)	Steel	1995	Floor drains direct spills to oil/water separator	# 3 Emergency Generator
96	CIU		330	Ammonium Hydroxic	Inside, Wastewater Treatment	Inside, Wastewater Treatment	Polypropylene	1995	Floor drains direct spills to wastewater	Tote, Replaces Anhydrous Ammonia Tank (A5HR)
97	CIU	17-2585	1,500	Nalco - ACTI BROM	Cooling Tower Chemical Treatment Bldg.	Cooling Tower Chemical Treatment Bldg.	Polypropylene	1991	Sealed, self contained building floor	Cooling Tower Biocide
98	Removed	17-2591	1,500	Nalco - CORE SHEL	Cooling Tower Chemical Treatment Bldg.	Cooling Tower Chemical Treatment Bldg.	Polypropylene	1991	Sealed, self contained building floor	Removed from Service 2017
99	CIU		330	Sodium Hypochlorit	Inside Station, water treatment area	Inside Station, water treatment area	Polypropylene		Floor drains direct spills to wastewater	For disinfection - NO LONGER USED
100	Removed			Lime	SE CORNER OF THE COAL PILE	SE CORNER OF THE COAL PILE	Concrete			REMOVED
101	Removed		600	Nalco 7767	Wastewater Pretreatment	Wastewater Pretreatment	Polyethylene	1985	Floor drains direct spills to wastewater	REMOVED
102	Removed		100	Nalco 7735	Inside, Wastewater Pretreatment	Inside, Wastewater Pretreatment	Polyethylene	1985	Floor drains direct spills to wastewater	REMOVED
103	CIU		50	Sodium Sulfite	Water Pretreatment	Water Pretreatment	Polyethylene	1995	Floor drains direct spills to wastewater	Dechlorination
104	CIU		600	NalcoTRAC 109	1st Floor, Main Plant Bldg.	1st Floor, Main Plant Bldg.	Steel	1968	Floor drains direct spills to oil/water separator	Scale inhibitor, feed tank
105	CIU		500	H_2SO_4	1st Floor of Main Plant, Demineralizer Area	1st Floor of Main Plant, Demineralizer Area	Polyethylene		To Neutralizing Basin	Demineralizer day tank
106	CIU		500	NaOH	1st Floor of Main Plant, Demineralizer Area	1st Floor of Main Plant, Demineralizer Area	Steel		To Neutralizing Basin	Demineralizer day tank
107	CIU		340	Nalco H-135	Inside Polymer Building	Inside Polymer Building	Polyethylene	1995	Retention Basin	Leased Tote, Biocide
108	Removed		340	Nalco H-135	Inside Polymer Building	Inside Polymer Building	Polyethylene		Retention Basin	Leased Tote, Biocide - REMOVED
109	CIU		340	Nalco H-135	Floor of Centrifuge Bldg	Floor of Centrifuge Bldg	Polyethylene	1995	Retention Basin	Leased Tote, Biocide
110	CIU		300	Sodium Hypochlorit	Sewage Treatment Building	Sewage Treatment Building	Polyethylene	1998	Polyethylene containment	Sewage treatment building
111	Removed		75	Hydrazine	1st Floor of Main Plant, Unit No. 1	1st Floor of Main Plant, Unit No. 1	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used
112	Removed		75	Hydrazine	1st Floor of Main Plant, Unit No. 2	1st Floor of Main Plant, Unit No. 2	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used
113	Removed		75	Hydrazine	1st Floor of Main Plant, Unit No. 3	1st Floor of Main Plant, Unit No. 3	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used
114	Removed		75	Hydrazine	1st Floor of Main Plant, (Spare Tank)	1st Floor of Main Plant, (Spare Tank)	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used
115	Removed		75	Hydrazine	1st Floor of Main Plant, (Spare Tank)	1st Floor of Main Plant, (Spare Tank)	Stainless Steel		Floor drains direct spills to wastewater	Empty - Hydrazine no longer used - REMOVED
116	CIU		75	Ammonium Hydroxic	1st Floor of Main Plant, Unit No. 1	1st Floor of Main Plant, Unit No. 1	Stainless Steel	1971	Floor drains direct spills to wastewater	
117	CIU		75	Ammonium Hydroxic	1st Floor of Main Plant, Unit No. 2	1st Floor of Main Plant, Unit No. 2	Stainless Steel	1971	Floor drains direct spills to wastewater	
118	CIU		75	Ammonium Hydroxic	1st Floor of Main Plant, Unit No. 3	1st Floor of Main Plant, Unit No. 3	Stainless Steel	1971	Floor drains direct spills to wastewater	
119	CIU		75	Ammonium Hydroxic	1st Floor of Main Plant, (Spare Tank)	1st Floor of Main Plant, (Spare Tank)	Stainless Steel		Floor drains direct spills to wastewater	Tank is normally empty; it is a spare.
120	TOS		50	Trisodium Phospha	1st Floor of Main Plant at Auxiliary Boiler	1st Floor of Main Plant at Auxiliary Boiler	Stainless Steel	1971	Floor drains direct spills to wastewater	Tank is normally empty; this chemical is no longer used.
121	CIU		50	Ammonium Hydroxic	1st Floor of Main Plant at Auxiliary Boiler	1st Floor of Main Plant at Auxiliary Boiler	Stainless Steel	1971	Floor drains direct spills to wastewater	
122	CIU		75	Nalco 7396	Water Pretreatment	Water Pretreatment	Steel	1971	Floor drains direct spills to wastewater	Potable water system
123	CIU		100	Sodium Hypochlorite	Water Pretreatment	Water Pretreatment	Plastic	1971	Floor drains direct spills to wastewater	Tank is normally empty; Potable water system
124	CIU		500	Caustic (NaOH)	WATER PRETREATMENT	WATER PRETREATMENT	Steel		Floor drains direct spills to wastewater	Duplicate Listing to A2HR

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
125	CIU	17-2620	3,135	Propylene glycol	No. 2 condenser pit	No. 2 condenser pit	Polyethylene	2000	Floor drains direct spills to wastewater	Normally empty, lines run in trenches, do we need to keep?
126	OOS	17-2606	3,135	Propylene glycol	No. 2 condenser pit	No. 2 condenser pit	Polyethylene	2000	Floor drains direct spills to wastewater	Permanently OOS 2016 05 23 Replaced by 353
127	Removed		330	Calgon Chlor-Kill	Floor drains to wastewater treatment	Floor drains to wastewater treatment	Poly tote	2001	Polyethylene containment	Sodium Bisulfite 35% Sol'n - REMOVED
128	CIU		333	Dielectric oil	Outside RR thaw shed	Outside RR thaw shed	Steel		Concrete containment	Transformer
129	CIU		1,700	Truck wash water	Solids waste processing area truck wash	Solids waste processing area truck wash	Polyethylene		Self-contained floor sump	conical bottom solids settling tank
130	CIU		500,000	Scrubber process flu	No. 1 Scrubber absorber module	No. 1 Scrubber absorber module	Stainless	1995	Sump to retention basin	contains hydrated lime
131	CIU		500,000	Scrubber process flu	No. 2 Scrubber absorber module	No. 2 Scrubber absorber module	Stainless	1995	Sump to retention basin	contains hydrated lime
132	CIU		500,000	Scrubber process flu	No. 3 Scrubber absorber module	No. 3 Scrubber absorber module	Stainless	1995	Sump to retention basin	contains hydrated lime
133	Duplicate		109,000	Lime slurry	Beneath lime slurry tank	Beneath lime slurry tank	Steel	1995	Sump to retention basin	Duplicate Listing to A91HR
134	Duplicate		109,000	Lime slurry	Beneath lime slurry tank	Beneath lime slurry tank	Steel	1995	Sump to retention basin	Duplicate Listing to A92HR
135	Duplicate		109,000	Lime slurry	Beneath lime slurry tank	Beneath lime slurry tank	Steel	1995	Sump to retention basin	Duplicate Listing to A93HR
136	Duplicate		109,000	Lime slurry	Beneath lime slurry tank	Beneath lime slurry tank	Steel	1995	Sump to retention basin	Duplicate Listing to A94HR
137	CIU		4,000 tons	Fly ash/wastewater	North of old stack	North of old stack	Concrete	1971	Drains to wastewater	Transfer tank
138	CIU		4,000 tons	Fly ash/wastewater	North of old stack	North of old stack	Concrete	1971	Drains to wastewater	Transfer tank
139	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
140	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
141	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
142	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
143	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
144	CIU		12,700	Bottom ash	North of old stack	North of old stack	Steel	1971	Drains to wastewater	Hydrobin
145	Doesn't Exist			Dielectric oil	Rob. Run Coal Belt House 3	Rob. Run Coal Belt House 3	Steel		None	Transformer - Owned by Consol/on Consol property
146	CIU		393	Dielectric oil	Rob. Run Coal Belt House 4	Rob. Run Coal Belt House 4	Steel		Concrete containment	Transformer
147	CIU		75	Dielectric oil	Rob. Run Coal Belt House 5	Rob. Run Coal Belt House 5	Steel		Concrete containment	Transformer
148	CIU		286	Dielectric oil	Rob. Run Coal Belt House 6	Rob. Run Coal Belt House 6	Steel		Concrete containment	Transformer
159	Doesn't Exist			Dielectric oil	Rob. Run Coal Belt House 7	Rob. Run Coal Belt House 7	Steel		None	Transformer - never existed
160	CIU		508,640	Granular Urea	Adjacent to and west of #3 absorber bldg.	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Urea Storage Silo 501, dry material - NOT A TANK
161	CIU		508,640	Granular Urea	Adjacent to and west of #3 absorber bldg.	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Urea Storage Silo 502, dry material - NOT A TANK
162	CIU		508,640	Granular Urea	Adjacent to and west of #3 absorber bldg.	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Urea Storage Silo 503, dry material - NOT A TANK
163	CIU		508,640	Granular Urea	Adjacent to and west of #3 absorber bldg.	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Urea Storage Silo 504, dry material - NOT A TANK
164	CIU	17-2631	13,450	Urea Solution (40%)	164 (17-2631)	Adjacent to and west of #3 absorber bldg.	Stainless Steel	2001	Shared Concrete containment (A160 - A166)	Urea Dissolver Tank 501-1
165	CIU	17-2601	13,450	Urea Solution (40%)	165 (17-2601)	Adjacent to and west of #3 absorber bldg.	Stainless Steel	2001	Shared Concrete containment (A160 - A166)	Urea Dissolver Tank 501-2
166	CIU	17-2604	40,000	Urea Solution (40%)	166 (17-2604)	Adjacent to and west of #3 absorber bldg.	Steel	2001	Shared Concrete containment (A160 - A166)	Reactor Feed Tank
167	CIU	17-2632	2,000	Nalco Sure Cool 139	Inside Biocide building	Inside Biocide building	Poly	2002	Shared Concrete containment (A14, A97 and A167)	Biocide
168	CIU		35	Solvent	Inside station, first floor Unit 1 area	Inside station, first floor Unit 1 area	Steel		Floor drains direct spills to oil/water separator	parts washer
169	Removed		300	Bentonite Clay	Inside station, water pretreatment area	Inside station, water pretreatment area	Poly		Floor drains direct spills to wastewater	REMOVED
170	Removed		500	Sodium Sulfite	Sewage Treatment Building	Sewage Treatment Building	Poly	2002	Polyethylene containment	REMOVED
171	CIU		35	Solvent	Inside Station, first floor, column 23H	Inside Station, first floor, column 23H	Steel		Floor drains direct spills to oil/water separator	parts washer
172	CIU		15	Solvent	Outside coal handling building	Outside coal handling building	Steel		Concrete pad with trench drains pumped to OWS	parts washer
173	CIU		35	Solvent	Solids waste processing area shop (inside)	Solids waste processing area shop (inside)	Steel		Floor drains to retention basin	parts washer - ID No. 8-95
174	CIU	17-2639	1,700	Truck wash water	Truck wash at landfill (inside building)	Truck wash at landfill (inside building)	Poly	1992	Self-contained floor sump	conical bottom solids settling tank
175	CIU		200	Hydraulic Oil	Inside Station, Unit 1	Inside Station, Unit 1	Steel	2001	Floor drains direct spills to oil/water separator	SCR damper hydraulic feed reservoir
176	CIU		200	Hydraulic Oil	Inside Station, Unit 2	Inside Station, Unit 2	Steel	2001	Floor drains direct spills to oil/water separator	SCR damper hydraulic feed reservoir
177	CIU		200	Hydraulic Oil	Inside Station, Unit 3	Inside Station, Unit 3	Steel	2001	Floor drains direct spills to oil/water separator	SCR damper hydraulic feed reservoir
178	CIU		65	Lube oil	Inside lime slaker #21	Inside lime slaker #21	Steel	1991	Floor drans direct spills to retention basin	bearing lube oil reservoir
179	CIU		65	Lube oil	Inside lime slaker #22	Inside lime slaker #22	Steel	1991	Floor drans direct spills to retention basin	bearing lube oil reservoir
180	CIU		65	Lube oil	Inside lime slaker #12	Inside lime slaker #12	Steel	1991	Floor drans direct spills to retention basin	bearing lube oil reservoir
181	CIU		65	Lube oil	Inside lime slaker #11	Inside lime slaker #11	Steel	1991	Floor drans direct spills to retention basin	bearing lube oil reservoir
182	CIU		65	Hydraulic Oil	Inside Unit 1 scrubber building	Inside Unit 1 scrubber building	Steel	2001	Floor drains direct spills to wastewater	Scrubber knife gate hydraulic reservoir
183	CIU		65	Hydraulic Oil	Inside Unit 2 scrubber building	Inside Unit 2 scrubber building	Steel	2001	Floor drains direct spills to wastewater	Scrubber knife gate hydraulic reservoir
184	CIU		65	Hydraulic Oil	Inside Unit 3 scrubber building	Inside Unit 3 scrubber building	Steel	2001	Floor drains direct spills to wastewater	Scrubber knife gate hydraulic reservoir
185	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
186	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
187	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
188	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
189	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
190	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
191	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
192	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
193	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
194	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
195	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
196	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
197	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
198	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
199	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
200	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct A precipitator transformer rectifier
201	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
202	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
203	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
204	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
205	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
206	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
207	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
208	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
209	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
210	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
211	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
212	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
213	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
214	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
215	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
216	CIU		90	Silicon Oil	Unit 1 Precipitator penthouse	Unit 1 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 1 Duct B precipitator transformer rectifier
217	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
218	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
219	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
220	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
221	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
222	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
223	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
224	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
225	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
226	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
227	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
228	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
229	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
230	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
231	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
232	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct A precipitator transformer rectifier
233	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
234	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
235	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
236	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
237	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
238	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
239	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
240	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
241	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
242	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
243	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
244	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
245	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
246	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
247	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
248	CIU		90	Silicon Oil	Unit 2 Precipitator penthouse	Unit 2 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 2 Duct B precipitator transformer rectifier
249	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
250	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
251	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
252	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
253	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
254	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
255	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
256	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
257	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
258	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
259	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
260	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
261	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
262	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
263	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
264	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct A precipitator transformer rectifier
265	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
266	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
267	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
268	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
269	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
270	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
271	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
272	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
273	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
274	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
275	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
276	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
277	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
278	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
279	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
280	CIU		90	Silicon Oil	Unit 3 Precipitator penthouse	Unit 3 Precipitator penthouse	Steel		Inside penthouse, spills to ash hoppers below	Unit 3 Duct B precipitator transformer rectifier
281	CIU		110	Lube oil	Base of Unit 1A Induced Draft Fan	Base of Unit 1A Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 1A Induced Draft (ID) Fan Lube oil Reservoir
282	CIU		110	Lube oil	Base of Unit 1B Induced Draft Fan	Base of Unit 1B Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 1B Induced Draft (ID) Fan Lube oil Reservoir
283	CIU		110	Lube oil	Base of Unit 2A Induced Draft Fan	Base of Unit 2A Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 2A Induced Draft (ID) Fan Lube oil Reservoir
284	CIU		110	Lube oil	Base of Unit 2B Induced Draft Fan	Base of Unit 2B Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 2B Induced Draft (ID) Fan Lube oil Reservoir
285	CIU		110	Lube oil	Base of Unit 3A Induced Draft Fan	Base of Unit 3A Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 3A Induced Draft (ID) Fan Lube oil Reservoir
286	CIU		110	Lube oil	Base of Unit 3B Induced Draft Fan	Base of Unit 3B Induced Draft Fan	Steel	2001	Trench drains to wastewater treatment	Unit 3B Induced Draft (ID) Fan Lube oil Reservoir
287	CIU		110	Lube oil	Base of Unit 1A booster fan	Base of Unit 1A booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 1A Boster Fan lube oil reservoir
288	CIU		110	Lube oil	Base of Unit 1B booster fan	Base of Unit 1B booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 1B Boster Fan lube oil reservoir
289	CIU		110	Lube oil	Base of Unit 2A booster fan	Base of Unit 2A booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 2A Boster Fan lube oil reservoir
290	CIU		110	Lube oil	Base of Unit 2B booster fan	Base of Unit 2B booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 2B Boster Fan lube oil reservoir
291	CIU		110	Lube oil	Base of Unit 3A booster fan	Base of Unit 3A booster fan	Steel	1991	Trench drains to wastewater treatment	Unit 3A Boster Fan lube oil reservoir
292	CIU		110	Lube oil	Base of Unit 3B booster fan	Base of Unit 3B booster fan	Steel	191	Trench drains to wastewater treatment	Unit 3B Boster Fan lube oil reservoir
293	CIU		55	Propylene glycol	Transfer House #7 Rob Run Coal Conveyor	Transfer House #7 Rob Run Coal Conveyor	Steel	2002	Containment Pallet	55-gal drum on containment pallet
294	CIU		500	Propylene glycol	Transfer House #6 Rob Run Coal Conveyor	Transfer House #6 Rob Run Coal Conveyor	DW-Poly	2002	Double Walled Tank	
295	CIU		500	Propylene glycol	Transfer House #5 Rob Run Coal Conveyor	Transfer House #5 Rob Run Coal Conveyor	DW-Poly	2002	Double Walled Tank	
296	CIU		100	Propylene glycol	Transfer House #3 Rob Run Coal Conveyor	Transfer House #3 Rob Run Coal Conveyor	DW-Poly	2002	Double Walled Tank	
297	Removed		2,500	Nalco 7320	Biocide Building	Biocide Building	Poly	2002	Floor drains to WWT	Biocide - REMOVED
298	CIU		27,600	Transformer Oil	Outside Station, East Side Of Unit #1	Outside Station, East Side Of Unit #1	Steel	2005	Concrete containment	#1 Main Transformer
299	CIU	17-2619	16,570	New Lube Oil	299 (17-2619)	Station Basement	Steel/Conc	1972	Trench drains to wastewater treatment	
300	CIU	17-2618	16,570	Dirty Lube Oil	300 (17-2618)					
301	CIU		250	Lube oil	Inside station, unit #1	Inside station, unit #1	Steel	1971	Trench drains to wastewater treatment	Unit #1 Seal Oil Tank
302	CIU		250	Lube oil	Inside station, unit #2	Inside station, unit #2	Steel	1971	Trench drains to wastewater treatment	Unit #2 Seal Oil Tank
303	CIU		250	Lube oil	Inside station, unit #3	Inside station, unit #3	Steel	1971	Trench drains to wastewater treatment	Unit #3 Seal Oil Tank
304	CIU		200	Propylene glycol	Crusher House	Crusher House	DW-Poly	2004	Double Walled Tank	
305	CIU		100	Propylene glycol	Reclaim Tunnel	Reclaim Tunnel	DW-Poly	2004	Double Walled Tank	
306	Removed		2,000	No. 2 fuel oil	Crusher House	Crusher House	DW-steel	2004	Double Walled Tank	Removed from service 2014
307	CIU		200	Hydraulic Oil	Inside Station, 1st floor, Unit #1	Inside Station, 1st floor, Unit #1	Steel	2005	Floor drains direct spills to oil/water separator	Unit #1 EH System - Turbine control
308	CIU		200	Hydraulic Oil	Inside Station, 1st floor, Unit #2	Inside Station, 1st floor, Unit #2	Steel	2007	Floor drains direct spills to oil/water separator	Unit #2 EH System - Turbine control
309	CIU		200	Hydraulic Oil	Inside Station, 1st floor, Unit #3	Inside Station, 1st floor, Unit #3	Steel	2006	Floor drains direct spills to oil/water separator	Unit #3 EH System - Turbine control
310	Removed		1,000	Gasoline	#1 Stack Out area of SWP	#1 Stack Out area of SWP	Steel	2008	Drains to grit chambers in solid waste processing	Owned by Bruceton Petroleum Being Removed
311	CIU		1,000	#2 Fuel Oil	Coal Handling Dozer Pad	Coal Handling Dozer Pad	Steel		Drains to ditch containment system in coal handling	Owned by Bruceton Petroleum
312	CIU		29,542	Transformer Oil	Adjacent to switchyard	Adjacent to switchyard	Steel	2011	below grade containment pit - no pump	New unit 3 Main Transformer
313	CIU		4,185	Transformer Oil	Adjacent to switchyard	Adjacent to switchyard	0	2011	below grade containment pit - no pump	New spare scrubber tranformer
314	CIU	17-2599	5,400	Sodium Hypochlorite	West of North Cooling Tower next to biocide building	West of North Cooling Tower next to biocide building	HDXLPE w/OR 100	~2012		Biocide treatment of cooling tower
315	CIU	17-2576	1,500	gasoline tank	#1 Stack Out pad at solid waste building	#1 Stack Out pad at solid waste building	DW-steel	2014	Double Walled Tank	
316	CIU		1,000	Diesel	#1 Stack Out pad at solid waste building	#1 Stack Out pad at solid waste building	DW-steel	2014	Double Walled Tank	Off Road Diesel
317	CIU			Lube oil	Lime unloading hydrualic skid	Lime unloading hydrualic skid	Steel	1995		
318	CIU	17-2635	900,000	Metal wash waters	Clarifier tank - Between Unit #2 and Unit #3 absorber	Clarifier tank - Between Unit #2 and Unit #3 absorber	Steel	2002	Drains to waste water treatment	Metal wash capture process
319	CIU	17-2600	37,500	Metal wash waters	Reaction tank - Between Unit #2 and Unit #3 absorber	Reaction tank - Between Unit #2 and Unit #3 absorber	Steel	2013	Drains to waste water treatment	Metal wash capture process
320	CIU		400	Nalco Core Shell 71	Organo sulfide skid - clarifier tank building	Organo sulfide skid - clarifier tank building	Poly	2013	Drains to waste water treatment	Metal wash capture process
321	CIU		400	Nalco 1689	Polymer feed skid clarifier tank building	Polymer feed skid clarifier tank building	Poly	2013	Drains to waste water treatment	Metal wash capture process
322	CIU		300	Propylene glycol (50	Coal Handling Dozer Pad	Coal Handling Dozer Pad	Poly tote		Drains to ditch containment system in coal handling	
323	CIU		1,000		diesel tank	diesel tank				
324	CIU	17-2611	250,000	DI water storage	Outside behind pretreatment	Outside behind pretreatment	ASTMA-285 GRC S	1972		
325	CIU	17-2575	250,000	U1 condensate stora	Outside behind pretreatment	Outside behind pretreatment	ASTM A-285 GRC	1972		
326	CIU	17-2597	250,000	U2 condensate stora	Outside behind pretreatment	Outside behind pretreatment	ASTM A-285 GRC	1973		

Co. Tank ID#	Tank Status	State/ Regulatory Tank ID See All WV ASTs tab for details of registration	Tank Capacity	Contents	Description/ID	Tank Location	Tank Construction	Installation Date	Spill Protection	Comments
327	CIU	17-2592	250,000	U3 condensate stora	Outside behind pretreatment	Outside behind pretreatment	ASTM A-285 GRC	1974		
328	CIU	17-2603	20,000	U1 cooling H2O hea	8th floor	8th floor	ASTM A-285 GRC	1972		
329	CIU	17-2589	20,000	U2 cooling H2O hea	8th floor	8th floor	ASTM A-285 GRC	1972		
330	CIU	17-2594	20,000	U3 cooling H2O hea	8th floor	8th floor	ASTM A-285 GRC	1973		
331	CIU	17-2595	10,000	Potable H2O	14th floor	14th floor	ASTM A-285 GRC	1972		
332	CIU	17-2602	15,000	Fire Water	14th floor	14th floor	ASTM A-285 GRC	1972		
333	CIU	17-2640	93,750	U1 DA storage tank	11th or 13th floor?	11th or 13th floor?	A515 GR70 Steel	1972		
334	CIU	17-2636	93,750	U2 DA storage tank	11th or 13th floor?	11th or 13th floor?	A515 GR70 Steel	1973		
335	CIU	17-2586	93,750	U3 DA storage tank	11th or 13th floor?	11th or 13th floor?	A515 GR70 Steel	1974		
336	CIU	17-2624	4,500	RO storage tank	1st floor	1st floor	Fiberglass	1972		
337	CIU	17-2621	7,500	Aux boiler DA tank	5th floor	5th floor	Steel	1972		
338	CIU			cooling tower makeu	Adjacent to cooling towers	Adjacent to cooling towers				
339	CIU			cooling tower makeu	Adjacent to cooling towers	Adjacent to cooling towers				
340	CIU	17-2626	5,000	condensate return ta	2nd floor U1	2nd floor U1	ASTM A-285 GRC	1972		Not used but does contain H2O
341	CIU	17-2588	10,000	Filtered water			Steel	1972		Flows through in pretreatment
342	CIU	17-2578	25,000	clarifier tank	1st floor pretreatment	1st floor pretreatment	Steel	1972		Not used but does contain H2O
343	CIU	17-2628	25,000	clarifer tank	1st floor pretreatment	1st floor pretreatment	Steel	1972		Not used but does contain H2O
344	CIU	17-2584	107,215	clearwell tank	1st floor pretreatment	1st floor pretreatment	Concrete	1972		Not used but does contain H2O
345	CIU	17-2581	1,500	RO equalization tank	Pretreatment south of RO	Pretreatment south of RO	HDPE	2011		
346	CIU	17-2614	1,500	U1 Drip & Drain Tan	back of building	back of building	ASTM A-285 GRC	1972		
347	CIU	17-2587	1,500	U2 Drip & Drain Tan	back of building	back of building	ASTM A-285 GRC	1973		
348	CIU	17-2617	1,500	U3 Drip & Drain Tan	back of building	back of building	ASTM A-285 GRC	1974		
349	CIU	17-2634	1,700	TruckWash Solid W	Water	Water	Polyethylene	1992		
350	CIU	17-3352	9,850	Emulsified Sulfur	Lime Silo #1	Lime Silo #1	Fiberglass Reinforced Plastic	2016	Drains to retention basin	
351	CIU	17-3350	9,850	Emulsified Sulfur	Lime Silo #2	Lime Silo #2	Fiberglass Reinforced Plastic	2016	Drains to retention basin	
352	CIU	17-3351	4,997	Nalco Core Shell 71	Waste Building (East End)	Waste Building (East End)	Polypropylene	2016	Sealed, self contained building floor	Corrected Volume
353	CIU	17-3402	3,135	Propylene glycol	No. 2 condenser pit	No. 2 condenser pit	Polyethylene	2016	Floor drains direct spills to wastewater	Replaced tank 126
354	CIU	17-3772	9,402	Hydrogen Peroxide 3	Landfill Leachate system	landfill	DW XLPE	9/3/2019		
355	CIU	17-3775	7,087	Sodium Hydroxide la	Landfill Leachate system	landfill	DW XLPE	9/3/2019		
356	CIU	17-3774	7,087	Nalmet 1689 Organ	Landfill Leachate system	landfill	DW XLPE	9/3/2019		
357	CIU	17-3773	7,087	Ferric Chloride	Landfill Leachate system	landfill	DW XLPE	9/3/2019		
358	CIU		700	ULS Diesel	U2 Circ H20 Diesel Fire Pump	U2 Circ H20	DW Steel	2019		

ALLEGHENY ENERGY UST INVENTORY

STATION	LOCATION	(STATE) FAC. ID#	TOTAL # USTs	#USTs FED. REG.	# USTs STATE REG.
HARRISON PS	P.O. BOX 600 HAYWOOD, WV 26366	**(WV) 1701790**	4	1	1

UST CO. ID#	STATE UST ID#	DATE INSTALL	TANK CONSTRUCT.	TANK LEAK DETECT.	OVERFILL PROTECTION	SPILL PREVENTION	STATE FEE	CAPACITY (GALS)	STORED SUBSTANCE	PIPE CONSTRUCT.	PIPE OPER. MODE	PIPE LEAK DETECT.	COMMENTS
TO-1		1972	STEEL	NO	NO	NO	N/A	15000	LUBE OIL	STEEL	N/A	N/A	Moved to AST list
TO-2		1972	STEEL	NO	NO	NO	N/A	15000	LUBE OIL	STEEL	N/A	N/A	Moved to AST list
GL-1		1973	STEEL	NO	NO	NO	N/A	UNKNOWN	GLYCOL	UNKNOWN	N/A	N/A	REMOVED - 2002
G-2	1	1990	FRP	YES	YES	YES	YES	2000	GASOLINE	FRP	Pressure	YES	Closed Sept. 2008

Shaded: Exempt from registration or closed

Section III – Annexes

Annex 1 – Facility and Locality Information

MATERIAL INVENTORY

Substance	MSDS #	Potential Quantity On Site	Storage Method	Approx. Average Use	Purpose	Assoc. NPDES Permit Discharge
H_2SO_4		10,000 gal	Tank	1,500 gal/wk	Acidification	001/002
Propylene Glycol		11,370 gal	Tank/Barrels	As needed	Antifreeze	001/002
Nalco 3DT121		4,03,600 gal	Tank	15 gal/day	Dispersant	001/002
No. 2 Fuel Oil		14,100 gal	Tank	As needed	Vehicle fuel and boiler start up fuel	N/A
Kerosene		4,000 gal	Tank	As needed	Heating	N/A
Equipment Oil		48,176 gal	Tanks, drum	As needed	Lubrication	001/002
Hydraulic Oil		1,695 gal	Tanks, drum	As needed	Hydraulics	001/002
Waste Oil		1,22,300 gal	Tanks	As accumulated	Waste product	001/002
Dielectric Oil			Transformers	none	Transformer oil	001/002
Lime		58,000 tons	Tank/silo	468 ton/day	SWP-FGD	N/A
Fly Ash		286,275 cf	Silo	none	Waste product	008
NalClear 7767		3,400 gal	Tank	400 gal/wk	Scrubber thickener	008
Aqua Ammonium Hydroxide		650 gal	Tote	As needed	Water treatment	001/002
Nalco H-130		3,000 gal	Tank	200 gal/wk	Biocide	001/002
Sodium Hypochlorite		7,000 gal	Tank, tote	As needed	Disinfection	001/002
NalClear 7767		2110 gal	Drum/Tank	< 1 gal/wk	Water treatment	001/002
Nalco 73311 Trac 109		600 gal	Tank, drum	55 gal/wk	Water treatment	001/002
Nalco 7396		600 gal	Drum	55 gal/3 mo	Water treatment	001/002
Urea Solution		66,900 gal	Tank	28,000 gal/day	SCR	N/A
Solvent		540 gal	Tank	270gal/mo	Parts washer	001/002
Silicon Oil		gal	Transformer rectifiers	N/A	Transformer	N/A

Section III – Annexes

Annex 1 – Facility and Locality Information

Coal		1,000,000 tons	On the ground	12,000 tons/day	Fuel	0001/002
Gasoline		1,500 gal	Tank	As needed	Fuel	001/002
Powdex Resin P-307		4,000 lbs	Bags	630 lb/mo	Water treatment	001/002
Powdex Resin PD-41		2,000 lbs	Bags	As needed	Water treatment	001/002
Sodium Bicarbonate		5,000 lbs	Bags	50 lb/week	Sewage	101
Vinegar 200-grain		220 gal	Drums	200 gal/yr	Lime removal	N/A
7193 Polymer		400 gal	Barrel	As needed	Centrifuge polymer	N/A
Nalco 1393		2,000 gal	Tank	As needed	Scale Inhibitor	001/002
Nalco WT2230		2,700 gal	Totes	As needed	Water treatment	001/002
Nalco 71264		7087 gal	Tank	As needed	Water treatment	008
Nalco 1689		300 gal/7087 gal	Totes/Tank	As needed	Water treatment	001/002/008
Nalco Acti-Brom 1338		1,500 gal	Tank	As needed	Water treatment	001/002
Nalco Core-Shell 71301		5,000 gal	Tote, tank	As needed	Water treatment	001/002
Emulsified Sulfur		19,700 gal	Tanks	As needed	FGD system	N/A
Hydrogen Peroxide (35-40%)		9402 gal	Tank	As needed	Water treatment	008
Nalco 7468		550 gal	Barrels	As needed	Water treatment	001/002
Nalco EN/ACT 7894		90#	Solid Log	Continuous	Water treatment	008
Sodium Hydroxide		7087 gal	Tank	Continuous	Water treatment	008
556 Zyme-Treat		5 gal	Jug	As needed	Pre-digester for oil residue	001/002
Aquamark AQ 587		300 gal	Tote	As needed (infrequent use)	Cationic, water-soluble polymer	008

Date Last Modified: 9/11/2019		Section V-A Description of Tank						Section V-B Substance Stored		
Company	Facility	Tank ID	WV Reg #	WV Level	Reason for Level	Name/Description	Maximum Tank Capacity (gallons)	Product	CAS #	Chemical Name
MP	Harrison PS	4	17-2610	1	Contents	Cooling Tower Circ Water Treatment	10,000	Sulfuric A	7664-93-	Sulfuric Acid
MP	Harrison PS	14	17-2622	R+L		Cooling Tower Dispersant	4,000	Nalco 3D	Other	Nalco 3D Trasar 3DT121
MP	Harrison PS	15	17-2637			Metal Wash Water - Clean Effluent tan	750,000	Metal W	7732-18-	Water
MP	Harrison PS	20	17-2605	R+L		Kerosene	4,000	Kerosene	8008-20-	Kerosene
MP	Harrison PS	30	17-2590	R+L		Unit 1 Main Turbine Reservior	12,200	Turbine	64742-01	Residual Oils (Petroleum)
MP	Harrison PS	31	17-2598	R+L		Unit 2 Main Turbine Reservior	12,200	Turbine	64742-01	Residual Oils (Petroleum)
MP	Harrison PS	32	17-2629	R+L		Unit 3 Main Turbine Reservior	12,200	Turbine	64742-01	Residual Oils (Petroleum)
MP	Harrison PS	53	17-2625	R+L		No 2 Fuel Oil - Coal Handling	12,000	#2 Fuel O	8042-47-	Mineral Oil
MP	Harrison PS	80	17-2627	R+L	Contents	Bulk Polymer Storage Tank, Feeds 76	2,000	Nalco Na	Other	Nalco NalClear 7767
MP	Harrison PS	97	17-2585	R+L		Cooling Tower Biocide	1,500	Nalco Ac	Other	Nalco Acti-Brom 1338
MP	Harrison PS	98	17-2591	R+L	Contents	Cooling Tower Biocide	1,500	Nalco Co	Other	Nalco Core Shell 71301
MP	Harrison PS	125	17-2620	R+L		Propylene Glycol - Unit 2 Condensate	3,135	Propylen	57-55-6	Propylene Glycol
MP	Harrison PS	126	17-2606	R+L	Permanently	Propylene Glycol - Unit 2 Condensate	3,135	Propylen	57-55-6	Propylene Glycol
MP	Harrison PS	164	17-2631	R+L		Urea Dissolver Tank 501-1	13,450	Urea Sol	57-13-6	Urea
MP	Harrison PS	165	17-2601	R+L		Urea Dissolver Tank 501-2	13,450	Urea Sol	57-13-6	Urea
MP	Harrison PS	166	17-2604	R+L		Urea Feed Tank	40,000	Urea Sol	57-13-6	Urea
MP	Harrison PS	167	17-2632	R+L		Biocide	2,000	Nalco Su	2809-21-	Hydroxyethylidenediphosphon
MP	Harrison PS	299	17-2619	R+L		New Lube Oil	16,570	New Lub	64742-01	Residual Oils (Petroleum)
MP	Harrison PS	300	17-2618	R+L		Clean Lube Oil	16,570	Clean Lu	64742-01	Residual Oils (Petroleum)
MP	Harrison PS	314	17-2599	1	Contents	Cooling Tower Biocide Treatment	5,400	Sodium	7681-52-	Sodium Hypochlorite
MP	Harrison PS	315	17-2576	R+L		Gasoline - #1 stack out pad at SWP	1,500	Gasoline	8006-61-	Unleaded Gasoline
MP	Harrison PS	350	17-3352	R+L		Emulsified Sulfur Tank 1	9,850	Emulsife	7704-34-	Yellow Jacket Flowable Sulfur
MP	Harrison PS	351	17-3350	R+L		Emulsified Sulfur Tank 2	9,850	Emulsifie	7704-34-	Yellow Jacket Flowable Sulfur
MP	Harrison PS	352	17-3351	R+L		Nalco Core Shell 71301 -	8/15/2016	Nalco Co	64742-47	Nalco Core Shell 71301 -Floc
MP	Harrison PS	353	17-3402	R+L		Propylene Glycol - Unit 2 Condensate	3,135	Propylen	57-55-6	Propylene Glycol
MP	Harrison PS	354	17-3772	1	List of Lists	Hydrogen Peroxide 35% or less landfill	9,402	Hydroge	7722-84-	Hydrogen Peroxide 35%
MP	Harrison PS	355	17-3775	1	List of Lists	Sodium Hydroxide landfill leachate	7,087	Sodium	1310-73-	Sodium Hydroxide
MP	Harrison PS	356	17-3774	1	List of Lists	Nalmet 1689 Organosulfide	7,087	Nalmet 1	7647-14-	Organosulfide
MP	Harrison PS	357	17-3773	1	List of Lists	Ferric Chloride	7,087	Ferric Ch	7705-08-	Ferric Chloride

All SDS for chemicals used/stored at Harrison located:

https://www.3eonline.com/EeeOnlinePortal/DesktopDefault.aspx?tabid=53

or call:

Talk to a Verisk 3E representative - Call Verisk 3E at 1-800-451-8346 or +1(760) 602-8703

HARRISON POWER STATION ICP

Section III – Annexes

Annex 2 – Notification

a. Internal Notifications

Facility Response Coordinator	
Director – Gary J Dinzeo	(304) 584-2233
Cell Phone:	(724) 787-6977
Alternate Facility Coordinators	
Manager, Technical Services – Edward L Murphy	(304) 584-2210
Cell Phone:	(304) 904-8809
Manager, Operations – Mike Staff	(304) 584-2446
Cell Phone:	(440) 413-0017
Manager, Maintenance – Luke Sandolfini	(304) 584-2478
Cell Phone:	(724) 953-6490
On-Scene Coordinator (OSC)	
Emergency Response Contractor	1 (800) 746-4850
Weavertown Environmental Group	(Answers 24 hours)

b. Community Notifications

Local Fire Department	9-1-1
	(304) 623-6559
Local Emergency Planning Committee (LEPC): (Harrison County)	(304) 623-6559
Local Television\Radio Station for Evacuation Notification:	
WBOY Channel 12 - Clarksburg, WV	(304) 623-3311
WDTV Channel 5 – Clarksburg, WV	(304) 623-5555
WDTV Radio FM 98 – Fairmont, WV	(304) 366-9880
Hospitals:	
Fairmont General Hospital - Main	(304) 367-7100
Fairmont General Hospital - Emergency	(304) 367-7456
United Hospital Center – Bridgeport	(681) 342-1000

Section III – Annexes

Annex 2 – Notification

Downstream Intakes:

Water intakes for 20 miles downstream of station are listed on pages ERAP Section 2 page 3.

c. Federal and State Agency Notifications

National Response Center (NRC)	(800) 424-8802
WV Division of Environmental Protection	(800) 642-3074
WV Office of Emergency Services (SERC)(OES)	(304) 558-5380
State Police:	9-1-1
Fairmont WV	(304) 367-2701

HARRISON POWER STATION ICP

Section III – Annexes

Annex 3 – Response Management System

a. General, b. Command,
(1) List Facility Incident Commander

Emergency Response Coordinator**:**

Name: Gary J. Dinzeo

Position: Director

The Director is appointed as the facility's "Emergency Response Coordinator" (ERC) and is designated as the "qualified individual" with full authority to:

(1) Activate and engage in contracting with oil and hazardous material spill removal organization(s);

(2) Act as a liaison with the pre-designated Federal On-Scene Coordinator (OSC); and

(3) Obligate funds required to carry out all necessary or directed response activities.

In the Director's absence the following persons can be designated as the “Alternate Emergency Response Coordinator”: Manager, Technical Services, Manager, Maintenance and Manager, Operations.

In the event of an actual emergency, this plan establishes a direction for remedial actions and instructions for agency contact, procedures, and chain of command.

The chain of command at this facility begins with the Director. Responsibility for all station business is that of the Director. On the corporate level, the Director reports to the Vice President, East Fleet Operations. If an environmental incident occurs, a respective Manager in the Environmental Department is contacted; if a safety issue is raised the Director, Generation Safety and Human Resources or Manager is contacted.

HARRISON POWER STATION ICP

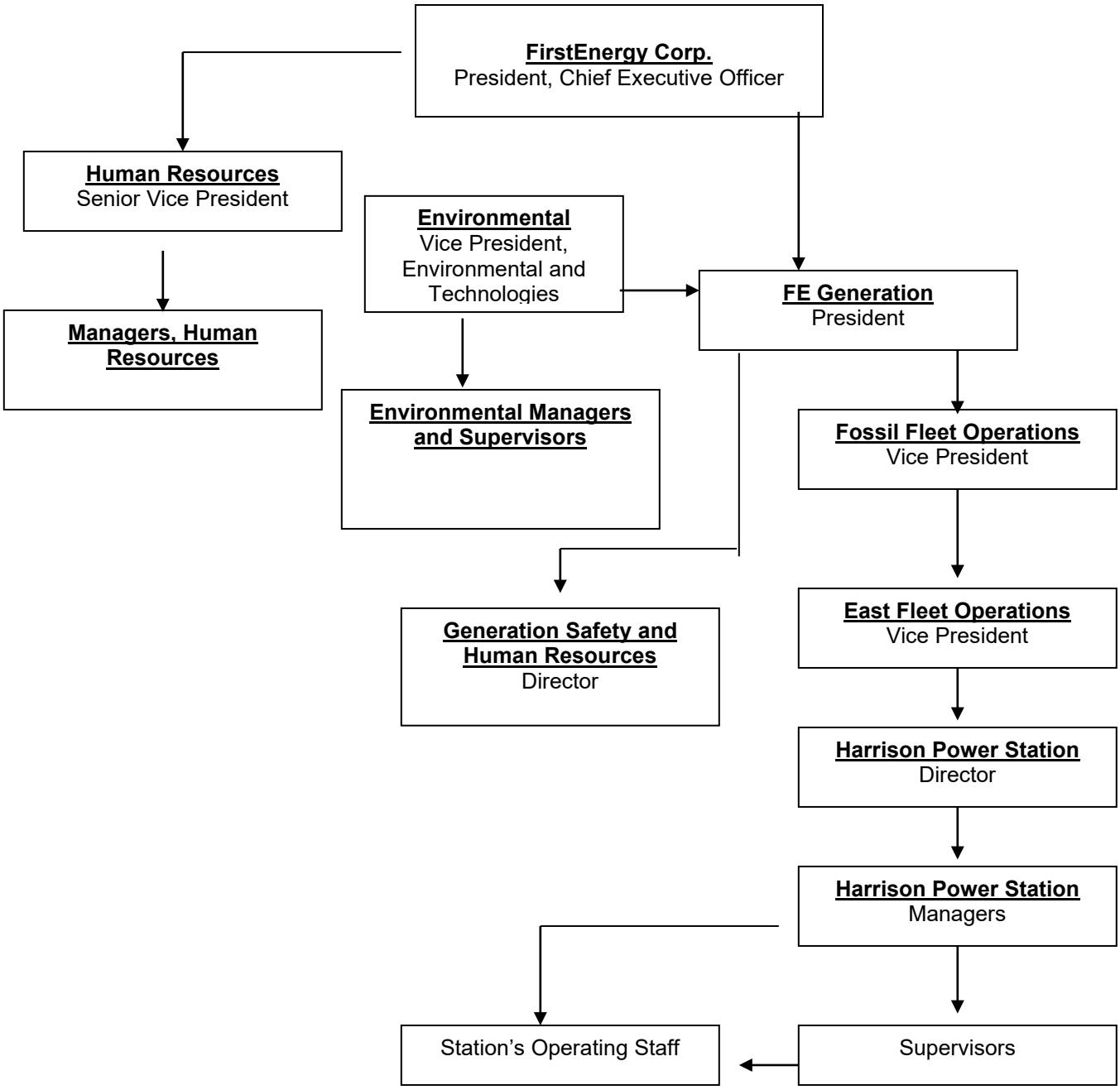
Section III – Annexes

Annex 3 – Response Management System

Section III – Annexes

Annex 3 – Response Management System

Chain of Command Flowchart



Section III – Annexes

Annex 3 – Response Management System

(2) Information (i.e., internal and external communications)

1.0 First Energy Corporate Communications provides the overall external communications effort during a crisis event.

1.1 Communication within the station property is conducted by radio, intercom, loud speaker and surveillance cameras (at gate access points). Phone system lines provide connections between station personnel and corporate management and service support. Fast-dial numbers are also available for contacting local emergency personnel.

1.2 In the event that all outside station phone communications are lost, follow these steps:

1.2.1 Try the telephone system; some tie line numbers are on the AE microwave system. Consider using cellular telephones or the satellite telephone.

1.2.2 If available, try the Emergency Power Control Communications radio.

1.2.3 If possible, operators shall maintain whatever load they are carrying on the station until communication is restored, unless a severe need for change is indicated by system frequency or voltage.

1.2.4 During weekday daylight hours, notify the support center who, in turn, will notify the telecom department. They will take corrective action and notify the telephone company as necessary.

1.2.5 Outside weekday daylight hours, send a courier to notify the support center who, in turn, will notify the telecom department. They will take corrective action and notify the telephone company as necessary.

1.2.6 If no persons other than operators are on the property and none of these can be spared to serve as courier, wait until shift change to notify the support center of the loss of communications.

1.2.7 Service Center radio equipment is available and may be helpful in contacting local dispatching centers or others who will relay messages.

Section III – Annexes

Annex 3 – Response Management System

(3) Safety

Site-Specific Safety and Health Plan

A copy of the Harrison Continuous Safety Improvement manual is available at the station. The manual is developed specifically for the station. The purpose of this manual is to:

- Provide employee training to ensure a safe work place
- Establish written policy and guidelines regarding safety and health;
- Outline procedures for station personnel.

There is a Safety, Health and Training department with safety representatives and/or consultants accessible and familiar with the facility.

(4) Liaison-Staff Mobilization

The facility has practices in place for call in capabilities for all personnel.

c. Operations

(1) Operational Response Objectives

As an established means of management, this power station has incorporated into its Emergency Plan and Prevention manual responses to certain emergency situations. Please refer to the Emergency Plan and Prevention manual for detailed information concerning these emergency responses. It is the policy of the Company that, when responding to emergency situations (especially those with potential to cause serious injury), health, safety and environmental impact are given first consideration; damage to equipment, second; and customer service third.

(2) Discharge or release control

A spill will require varying degrees of response efforts dependent upon, but not limited to the following factors: size of the spill; type of material spilled; proximity of spill to a waterway; potential of spill to travel offsite; and the potential of the spill to cause substantial harm to human health, or the environment. Small spills or operational spills will generally elicit a "routine" response since small amounts are involved and absorbent material, mopping, or hosing are generally sufficient. If mopping or hosing occurs, the resulting spill clean-up water is directed to the wastewater treatment facility via floor drains and sumps. Spills requiring an absorbent are handled in accordance with the manufacturer's directions, WVDEP requirements OSHA requirements, RCRA/CERCLA requirements, and common sense.

All visible discharges, releases and spills will be promptly corrected and any and all accumulated material, including oil, will be removed from diked areas.

(3) Assessment/monitoring

A self-monitoring program is in place for National Pollutant Discharge Elimination System (NPDES), solid wastes, and air requirements. Samples of process waters (NPDES) and groundwater (solid waste landfill) are taken and analyzed pursuant to permit requirements. Process waters are sampled by the station chemist or designated chemical technician and groundwater samples are obtained by an outside groundwater sampling team. Refer to Annex 11 for a summary of both NDPES Discharge Monitoring Requirements and Groundwater Requirements.

As part of this self-monitoring program as well as routine facility operations, the effluent from treatment facilities and storm water discharges are frequently observed for releases and possible system upsets.

(4) Containment

Secondary/appropriate containment structures encompass large outdoor aboveground bulk storage tanks, containers and oil containing ancillary equipment. These containment structures are made of non-porous materials and have a locking drainage valve. Indirect containment is provided for all tanks contained within the station building even if a secondary/sufficient containment structure is present since all floor drains drain to the either the oil/water separator, neutralization basin or the wastewater treatment lagoons. The discharge from the oil/water separator drains to the neutralization basin located upstream of the wastewater treatment lagoons.

(5) Recovery

Very small releases to small releases are typically recovered by absorbents. Larger operations will be by the ERC. All clean-up materials (i.e.,. absorbents, personnel protective equipment, contaminated equipment, etc.), recovered product, contaminated soil, and other miscellaneous wastes are handled and disposed of according to all applicable federal, state, and local laws and regulations.

(6) Decontamination

Decontamination will be monitored by the facility's Chemical Department. For larger incidents the ERC may enlist outside decontamination assistance.

(7) Non-responder medical needs including information on ambulances and hospitals

Hospital:

Fairmont General Hospital (main number)	(304) 367-7100
Fairmont General Hospital (ER)	(304) 367-7456
United Hospital Center (Bridgeport)	(681) 342-1000

(8) Salvage plans

The ERC, facility personnel and Environment, Health & Safety personnel along with other resources that they consider necessary (ie., environmental consultant) will decide on a case by case basis the salvage of any equipment.

d. Planning

(1) Hazard assessment, including facility hazards identification, vulnerability analysis, and prioritization of potential risks

1.0 The probability of a spill or leak occurring at Harrison Power Station in a magnitude that will endanger the public health and/or significantly degrade the environment is very remote.

2.0 A spill will require varying degrees of response efforts dependent upon, but not limited to the following factors: size of the spill; type of material spilled; proximity of spill to a waterway; potential of spill to travel offsite; and the potential of a spill to cause substantial harm to human health, or the environment. Small spills or operational spills will generally elicit a "routine" response since small amounts are involved and absorbent material, mopping, or hosing are generally sufficient. If mopping or hosing occurs, the resulting spill clean-up water is directed to the wastewater treatment facility via floor drains and sumps. Spills requiring an absorbent are handled in accordance with the manufacturer's directions, OSHA requirements, RCRA/CERCLA requirements, and common sense.

2.1 Small Spill (<2,100 gallons)

In these incidents, trained employee groups (such as the fire brigade) will respond with appropriate action to contain and mitigate a spill or leak. Spills of somewhat larger magnitude may require a more concerted effort on behalf of the employees.

2.2 Average Most Probable Discharge
Maximum Most Probable Discharge (12,000 gallons)
Medium Discharges (12,000 gallons)

Larger spills, or spills reaching navigable waters, prompt the contacting of a spill clean-up contractor. The company maintains a purchase order with a professional clean-up contractor. This volume is based on 10% of the worst-case discharge.

2.3 Worst-Case Discharge (>12,000 gallons)

In the event of a worst-case spill or spills that reach navigable waters, the spill clean-up contractor is contacted to control, clean-up, and contain all spilled materials. The worst-case spill scenario per 40 CFR 112 Appendix D is 12,000 gallons and is based upon the volume of the facility's largest aboveground bulk storage container (A53HR).

(2) Protection

PPE and associated training is contained in other Annexes.

(3) Coordination with natural resource trustees

The facility personnel and the Environmental Department personnel along with other resources that they consider necessary (ie., environmental consultant) will decide on a case-by-case basis with WVDEP.

(4) Waste management

The facility has contracts available for hazardous waste, municipal waste, and recyclables. All clean-up materials (e.g. absorbents, personnel protective equipment, contaminated equipment, etc.), recovered product, contaminated soil, and other miscellaneous wastes are handled and disposed of according to all applicable federal, state, and local laws and regulations.

e. Logistics

(1) Medical needs of responders

Hospital:

Fairmont General Hospital (main number)	(304) 367-7100
Fairmont General Hospital (Emergency)	(304) 367-7456
United Hospital Center (Bridgeport)	(681) 342-1000

Section III – Annexes

Annex 3 – Response Management System

(2) Site security

1.0 Normal security operation is as follows.

1.1 All station employees are issued magnetic ID card keys to release security gates. Remote video cameras and gate releases allow for opening of gates after proper identification.

1.2 Any station employee entering the grounds during non-scheduled work hours must report to the station management with his/her intended purpose. Station management will be notified again upon employee's departure of the premises.

1.3 Visitors must sign the register, located in the main office. Each visitor is to be assigned a "Visitor" badge which shall be worn in full view. If the purpose of the visit requires movement in or through the operating portions of the station, a hard hat and safety glasses will be issued. No visitors will be permitted in the station after regular working hours without the approval of station management.

1.4 Material deliveries and bulk chemical/fuel deliveries unloaded at the station will be under the direct supervision of appointed station personnel.

1.5 Intercompany couriers deliver and pick-up at the station's main entrance.

1.6 All vehicles other than company vehicles or delivery vehicles must be parked in the designated visitor parking area.

1.7 The main gate, permitting access to the station, is to be secured during the second and third shifts. The securing of all gates will be under the direction of the Production supervisor on duty during these hours.

2.0 Emergency security operation is as follows.

2.1 In the event of an emergency, all gates will be opened to emergency response vehicles and personnel. A station employee will be assigned to certain areas and/or gates to maintain orderly flow of traffic and to prevent unnecessary vehicles from entering the area. The individual assigned to the main gate will admit company employees only after personal recognition or identification by company ID badge. No one else will be admitted, except for emergency response personnel (ambulance, fire, police, spill teams, etc.), unless approval is obtained from station management.

2.2 The control of material will depend on the extent or type of emergency. All packages entering the station will be inspected. If delivery vans are permitted to make deliveries, they will be accompanied to and from their destination by company personnel.

2.3 No vehicles will normally be permitted to enter and leave the station other than necessary company vehicles, emergency vehicles, or other vehicles necessary for operation of the station (ash trucks). Supplies should be unloaded from supply trucks as quickly as possible allowing the rapid release of the truck.

2.4 The Shift Supervisor will immediately put into use all security aids. He will inspect all protective lighting, gates, fences, signs, and communication equipment. Any major defects will be brought to the attention of the Operations Manager. All minor difficulties will be corrected on the next scheduled maintenance work shift.

2.5 In the event of a severe emergency, the Managers will be notified immediately. If the Managers are not available, then the appointed Supervisors will be responsible for the guard-force organization. It will be the responsibility of these designated personnel to organize a guard force and assign a person to the main gate as quickly as possible. An adequate guard force will be assigned to each shift. The temporary guard force will consist of four persons and a Lead. The Lead will assign men to their posts, patrol between posts, and relieve as necessary. If a Lead is not available, each guard should report to the control room by phone every hour.

2.6 In the event of riots or civil disobedience in the area, immediately put the emergency security procedures into operation. Secure all gates and doors, and post guards. Notify the local, county, and state authorities.

3.0 Station lights located on the outside of the station buildings, roadway, and property fence corners illuminate the property after dark.

4.0 Alarm systems are incorporated into most of the operating equipment in order to prevent major disturbances. In the event of an emergency, station personnel anywhere within the station property can be alerted by the public address system or fire siren. The station public-address system is the official emergency alarm.

SOUNDING AN ALARM

- Report an emergency condition over the p.a. system (fire, rescue, spill, evacuation):

- Stay on the PA and the control room shall immediately pick-up.
- Give the exact location and nature of emergency information to the control room.
- Control room personnel shall sound the emergency alarm for 5 seconds then announce the location and nature of the emergency over the p.a. system and on radio channel #6.

FIRE:

Control Room Personnel - Upon hearing the verbal fire report shall:

- SOUND THE FIRE ALARM. Note: In the event the report of a fire is received by phone, the Control Room personnel shall broadcast on the PA "Fire at (location)" three times, sound the fire alarm, and repeat the location of the fire twice.
- Control Room Personnel shall contact the Production Supervisor at the scene to account for all Production Op-Tech's and report this information to the Central Accountability Officer. (Off-shifts and weekends the Production Supervisor is responsible for all employee accountability.)
- The Control Room Personnel shall notify security to open all motor operated vehicle gates at the front entrance and on the inner perimeter and place all turnstiles in the freewheel operation in the exit direction.
- Control Room Personnel shall call 911 if so instructed by Loss Control Team Chief.
- Control Room Personnel shall sound the evacuation alarm if instructed to do so by the Loss Control Teams Chief or another person having this authority.
- Control Room Personnel shall place into service any fire pumps: diesel or electric.
- If indicated or directed to do so by the Production Supervisor, Control Room Personnel will place into service the #2 Unit Ash Sluice Pump.
- The Control Room Personnel shall be alert to any situations or conditions that may require attention and notify the Loss Control Team Chief.
- In the event of a partial evacuation, or an advanced stage fire when outside assistance is requested, Control Room Personnel will handle communications.

NOTE: If the emergency is or may result in a major fire, the Production Supervisor shall decide if the natural gas supply should be shut off at the gas company regulation station along the ash haul road. It may also be necessary to vent the hydrogen from the generators and start a CO_2 purge. Control Room personnel will direct operators to do so.

EVACUATION:

This procedure is covers EVACUATION of the station in case of a danger to personnel or other circumstances that warrant this type of action.

- The ranking station management shall initiate EVACUATION when appropriate.
- When the ranking station management has determined that an EVACUATION is warranted, he/she will inform the Control Room to initiate the alarm.
- All employees not assigned emergency duties are to proceed to the nearest available exit and assemble in their designated areas.

Note: Evacuation Routes are posted on the first floor at all main elevators

(3) Communications (internal and external resources)

See b.(2) ABOVE

(4) Transportation (air, land, water).

The station is located on West Virginia Route 20 in Haywood WV. The facility is accessible by road (Rt. 20) and by railroad. The nearest airport is located in Bridgeport, WV. There are no docking facilities located on the West Fork River.

(5) Personnel support (e.g., meals, housing, equipment)

Facility has limited resources for preparing meals and providing housing. Commercial facilities in Shinnston, Fairmont or Clarksburg, WV will be utilized when necessary.

(6) Equipment maintenance and support

See EERG and other Annexes for Equipment List and Equipment testing and maintenance.

f. Finance/procurement/administration

(1) Resource list

Contained in other Annexes.

(2) Personnel management

Contained in other Annexes.

(3) Response equipment

See Equipment List in EERG

(4) Support equipment

See Equipment List in EERG

(5) Contracting

Contracts are in place for ERC and waste disposal.

(6) Claims procedures

Determined by Corporate Business Practices.

(7) Cost documentation

Determined by Corporate Business Practices. Typically costs will initially be charged towards the facility's operation. Provisions are available for special accounting to keep track of costs relating to a specific event or incident.

HARRISON POWER STATION ICP

Section III – Annexes

Annex 4 – Incident Documentation

The extent of pollution incidents over the operating years of the station, with respect to land and water discharges, has centered around NPDES permit excursions. However, there have been several NPDES reportable releases since 1998. For detailed information on any particular incident or for a composite list of all incidents, please contact the Environmental Department at the Greensburg Corporate Center.

HARRISON POWER STATION ICP

Section III – Annexes

Annex 5 – Training and Exercises/Drills

1. Training is conducted to inform and educate personnel on operating procedures, safety, and special projects. Training can be conducted by knowledgeable station personnel, corporate staff, third parties, online or a combination of these.

2. The Station has established fire-fighting training and spill handling/remedial action procedures.

3. The various problems encountered with fighting fires in various areas of the station are discussed at meetings with groups of employees who will compose the normal station fire fighting force (Loss Control Team).

4. The Loss Control Team is trained to fight advanced interior/exterior structure fires and incipient stage fires, respond defensively to spills of hazardous materials or oil (other than normal day-to-day operations of equipment inside the plant), provide first aid, and control other emergencies until outside emergency responders arrive. At that time, Station personnel shall maintain control of the incident and provide assistance to the outside responders.

5. Fire Response Training:
   It is the responsibility of the Loss Control Team Chief to train personnel in the essentials of efficient fire fighting. Education/training sessions to cover items such as Duties and Responsibilities of the Fire Brigade, Fire Hazards, Fire Attack Techniques, Fire Safety Concepts, etc. Training shall be commensurate with duties and functions personnel are expected to perform, and shall be documented. This shall include, at a minimum, the following:

   All employees:
   - Initial training consisting of hands-on practice in the operation of portable fire extinguishers followed by yearly education in the proper use of fire extinguishers.
   - Initial training in the use of a 1-1/2 inch water hose with fog, shield, and stream settings.

   Brigades who will fight incipient stage fires only:
   - Quarterly training to all brigade personnel.

   Brigades who will fight interior and exterior fires shall receive:
   - Quarterly training related to anticipated fire/rescue responses.
   - Two annual fire drills w/scenario based training that directly relates to expected fire/rescue duties.
   - Debriefings after each incident requiring a station fire or rescue alarm.
   - Training updates as needed.

   Brigade leaders and instructors:

- Provide training that is more comprehensive than that given to the general membership of the brigade.

Station:

- Two drills will be held each year.
- Station evacuation/accountability drill will be conducted every year.

NOTE: Local fire companies will assist, as requested by ranking station management, with structural fires/rescues and spill control.
NOTE: Station familiarization review with local fire departments will be conducted every other year.

6. Spill Response Training:

6.1 Spill drills are conducted annually to train response personnel and evaluate response actions. Each year, a review of team member's responsibilities according to the spill response plan will be conducted.

6.2 The Emergency Alarms for fire, evacuation, spill and rescue response are tested weekly to ensure proper working order.

6.3 Annually, the station's response equipment (pertinent to that particular drill) will be deployed to assure that personnel remain proficient in its use. The contracted spill response contractor or local hazardous materials response team may be included in this drill.

6.4 Records documenting drills conducted at the station will be maintained for a period of 3 years following completion of the drill.

6.5 All employees receive training developed in accordance with 29 CFR 1910.1200 Hazardous Communications. Training is received upon initial assignment and whenever a new hazard is introduced into the workplace,

6.6 Training records are maintained by the station training representative. Records are kept for a minimum of three years in a database.

7.0 Site-Specific Safety and Health Program

Copies of the various manuals issued by the corporate Safety, Health and Worker's compensation group are available at the station. The purpose of these manuals is to: provide employee training to ensure a safe work place; establish written policy and

guidelines regarding safety and health; and establish written safety and health training procedures for station personnel.

9.0 Facility personnel must successfully complete a mixture of classroom and On-the-Job Training (OJT) that teaches them to perform their duties in a way that assures the facility's compliance with regulations. Emergency Response duties fall under this criteria, as well as skills, required by each employee's job description.

10.0 Spill prevention training, (i.e.: Oil Handler's Training or similar program), in accordance with the requirements of 40 CFR 112.7(f), for station oil handling personnel (See Annex 16 for definition) are conducted at a minimum, on an annual basis. These briefings will discuss items such as operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules and regulations; general facility operations, the contents of the station's SPCC plan, etc. Briefings will also highlight and describe known discharges or failures; malfunctioning components and any recently developed precautionary measures. Documentation of this training shall be maintained for a minimum of three years.

11.0 A review of initial training according to the type and amount of introductory and continuing training that will be given to each person will be conducted, as needed. The Station Training Representative maintains the training program and the retraining requirements.

HARRISON POWER STATION ICP

Section III – Annexes

Annex 6 – Response Critique and Plan Review and Modification Process

The Manager, Environmental Generation Water & CCR Programs within FirstEnergy Corp. will maintain updates to the plans and provide station requested revisions. Each Director will assume the responsibility of having his technical and/or administrative staff review the Plan every year. In the event the Plan is implemented to respond to a spill, or if deficiencies are encountered during a mock drill (Annex 5) a review of the Plan will be conducted. Any Plan deficiencies will be corrected, and the Plan revised accordingly.

The following is the origination and update history for this ICP.

Origination Date:	February 2003
Update:	September 2003 October 2007 October 2010 May 2011 November 2014 June 2015 February 2018 January 2021

No attempt for this plan revision has been made to review the design of the facilities for current industry standards. The facility has been constructed and in operation for over 30 years. Major engineering firms have performed the design for all major modifications. All new work on oil storage containers will be in accordance with the appropriate industry standard or provide equivalent environmental protection.

HARRISON POWER STATION ICP

Section III – Annexes

Annex 6 – Response Critique and Plan Review and Modification Process

HARRISON POWER STATION ICP

Section III – Annexes

Annex 7 – Prevention

1.0 Tanks/Containers/Piping

1.1 All tanks (including SPCC defined bulk storage tanks), containers and piping are intended to comply with appropriate industry standards and specifications, both in material and construction, for their intended use.

1.2 All aboveground tanks are coated or painted (if applicable) to protect them from corrosion and to reduce oxidation.

1.3. All valves that permit direct outward flow of a tank or secondary/appropriate containment structure's contents must be manual with open/closed design. These valves are locked closed when in non-operating status. Starter controls on all oil pumps in non-operating status are located in the "OFF" position. The loading/unloading connections of oil pipelines are capped or blank flanged (with markings) when not in service or on stand-by service for extended periods.

1.4 All level alarm devices are maintained in good working condition.

1.5 Fill pipes are raised and coated to reduce corrosion. Pipeline terminal connections are capped or blank flanged and marked whether they are out of service or are in stand-by service.

1.6 The station is an engineered facility. Pipe supports therefore were properly designed to minimize abrasion and corrosion and to allow for expansion and contraction.

1.7 Piping pertaining to the 12,000 No. 2 fuel oil aboveground tank (A53HR) is double-walled fiberglass located underground. The outer containment pipe gravity drains to the tank's concrete containment which permits visual observation for any oil conveyed.

1.8 No completely buried metallic storage tanks are used at the facility. See item 4.2.17 of this Annex for discussion of two "underground" lube oil tanks (A299HR and A300HR).

1.9 All bulk oil storage containers, except for 55-gallon drums, are equipped with level detection devices as follows:

- A16HR, A17HR, A18HR, A20HR, A39HR, A53HR, A95HR and A306HR: a direct vision gauge to quickly determine the liquid level in each container.

- A30HR, A31HR and A32HR: high liquid level alarm which alarms in a constantly attended operation or surveillance station (i.e.: Control Room).
- A51HR: electronic high-level alarm (i.e.: light) at the first-floor filling location for this tank.

These devices will be regularly tested to ensure proper operation.

1.10 All mobile or portable oil storage containers shall be positioned away from any drainage way leading to outlets that do not go to a wastewater treatment unit. If located outdoors a means of secondary containment, such as a dike of sufficient volume to contain the largest single compartment or container with sufficient freeboard to contain precipitation (i.e., 25-year, 24-hour storm), must be provided.

1.11 Appropriate signage (if applicable) is in place warning vehicles not to endanger aboveground piping including that involved with oil transfer operations.

1.12 If a section of buried pipe containing oil is exposed for any reason, carefully inspect it for deterioration. If corrosion damage is evident, additional examination and corrective action as indicated by the magnitude of the damage must be taken.

2.0 Inspections, Tests and Records

2.1 All tanks, containers, ancillary electrical equipment, oil reservoirs, etc. are visually inspected quarterly. During these inspections, the tank/container/piping, etc. is evaluated for signs of deterioration, discharges and accumulation of oil/material. Containment areas are evaluated for integrity, staining, accumulated oil/material, etc. Tank/container foundations and supports are evaluated for integrity. See Section III Annex 22 of this ICP for inspection log sheets.

2.2 All above ground bulk oil storage containers (as defined by SPCC), except for 55-gallon drums and those tanks described in 2.3 of this section, are inspected (in addition to the visual inspection detailed above), as follows:

2.2.1 Tested for integrity (i.e., hydrostatic, radiographic, ultrasonic, acoustic emissions or other system of non-destructive shell testing) on a regular schedule according to industry standards and whenever repairs are made.

2.2.2 Field constructed containers are tested for brittle fracture if the container undergoes a repair, alteration, reconstruction, or change in service that might affect the risk of a discharge or failure due to brittle fracture.

2.3 Well designed shop-built bulk oil storage containers with a shell capacity of ≤30,000 gallons which are mounted in such a way that all the sides of the container, including the bottom, are visible during inspection is considered to be environmentally equivalent to visual inspection plus another form of testing. This applies to tanks A18HR and A20HR.

2.4 All aboveground valves, piping and appurtences are regularly inspected. During these inspections, the general condition of items such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves and metal surfaces.

2.5 Integrity and leak testing of all buried oil piping must be performed at the time of installation, modification, construction, relocation or replacement.

3.0 Material/Truck Unloading

3.1 Tank truck unloading procedures meet the minimum requirements of the US Department of Transportation.

3.2 Warning signs to prevent premature vehicle departure by the truck from the unloading areas are in place. This, along with visual inspection, will prevent premature vehicular departure.

3.3 The lower most drains and all outlets on tank trucks are inspected prior to filling and departure.

3.4 There are several oil unloading areas at the Harrison Power Station. Refer to Section III Annex 10 of this ICP for discussion of each of these and the corresponding containment.

3.5 Bulk oil/chemical/product deliveries are conducted under the supervision of a station Operator in conjunction with the deliver truck driver. The specified station personnel will verify the quantity (volume) and type of product needed or ordered, direct the vehicle to the appropriate transfer location, and supervise or observe the entire transfer operation using the Liquid Transfer Process Procedure (FGBP-OPS-0049). In the event of a spill, the designated station personnel will initiate appropriate action in accordance with Section III Annex 10 of this ICP.

3.6 Boiler and water treatment chemicals are received in drums, totes or bags. Relatively small quantities are used, obviating the need for elaborate transfer equipment. Other water treatment dry chemicals are stored close to the primary water treatment system. All station floor drains are directed to the station's wastewater treatment system. Therefore, any spillage located in the station building will be contained and treated.

3.7 Boiler cleaning chemicals are brought into the station in bulk at the time they are used. A boiler cleaning waste tank is located at the station for waste neutralization. The cleanings are generally handled by contractors under the supervision of station technical personnel (technician, chemist, engineer, etc.).

3.8 Both caustic soda and sulfuric acid (66°B), used for demineralizer regeneration, are transported by truck to the station and are stored in 10,000-gallon tanks inside the station building. These feed 500-gallon day tanks located inside the building. Sulfuric acid, used for cooling tower water treatment, is also transported by truck to the station and stored outdoors in a 10,000-gallon tank situated inside a concrete containment structure. Deliveries are inspected by designated station personnel and therefore, the likelihood of an adverse environmental impact is unlikely.

4.0 Spill/Leak/Discharge Preventative Measures

4.1 The probability of a spill or leak occurring at the Harrison Power Station in a magnitude that will endanger the public health and/or significantly degrade the environment is very remote.

4.2 Spill and leak prevention is generally maintained by secondary/appropriate containment structures, sumps, booms, and weirs. Specific and general containment systems are as follows.

4.2.1 The secondary containment structures are constructed of poured concrete, non-porous concrete block or metal and have manual rainwater drainage valves. These valves are normally locked in the closed position. Storm water is inspected prior to drainage in accordance with station procedures. Where any drain does not drain into wastewater treatment, any oil or water containing oil is removed by portable pumps to a drum or other container or is absorbed with an absorbent and containerized for proper disposal. The volume within the containment structure is at least the volume contained within the container plus enough freeboard which is

considered to be precipitation from the 25-year, 24-hour storm (4.65 inches).

4.2.2 The 10,000-gallon sulfuric acid tank (A4HR) used for circulating water treatment is located within a concrete containment structure. Any accumulated storm water drains via gravity piping to the circulating water basin (No. 3 floor bay). The valve on the gravity piping from the containment structure is typically kept in the open position since the circulating water system is a constantly monitored (via electronic pH monitors) closed loop system.

4.2.3 Five glycol tanks are present along the Rob Run coal belt at Transfer House 7 (A293HR), Transfer House 6 (A294HR), Transfer House 5 (A295HR), Transfer House 4 (A12HR) and Transfer House 3 (A296HR). All tanks are double walled polyethylene except for A293HR which a 55-gallon drum is situated on a plastic containment pallet.

4.2.4 The 4,000-gallon kerosene tank (A20HR) is situated in a below grade concrete and steel containment area. Any accumulated storm water, kerosene or a mixture of the two is pumped from the containment area directly to the adjacent oil/water separator.

4.2.5 The 1,000-gallon used oil/degreaser tank (A39HR) is a compartment of the oil/water separator and acts as a holding tank for skimmed oils. It is constructed of concrete and does not have a direct secondary containment structure. Any spillage would be conveyed to adjacent trenches which drain to the wastewater lagoons.

4.2.6 Each unit has a main transformer (A298HR, A41HR and A313HR), an “A” auxiliary transformer (A43HR, A44HR and A45HR) and a “B” auxiliary transformer (A46HR, A47HR and A48HR). There is valved piping that connects the containment of each “B” to the corresponding “A”, and the “A” containment to the main transformer containment. These valves are typically left open and any accumulated stormwater is pumped from the main transformer containment areas in accordance with station procedures.

4.2.7 Transformers (A49HR, A50HR, A54HR, A55HR, A56HR, A57HR, and A58HR) are each situated in a separate concrete containment area consisting of a below grade concrete pit covered with metal grating. Any accumulated rainwater is removed via a pump in accordance with station procedures.

4.2.8 Transformer A128HR is located on a concrete pad surrounded by a concrete berm. Any accumulated rainwater is drained from the containment area in accordance with station procedures.

4.2.9 Transformer A42HR and A313R are located in the Mon Power switchyard. Each has a containment pit with a pump.

4.2.10 The 12,000-gallon No. 2 fuel oil tank (A53HR) provided for coal handling activities is located within a concrete containment area. Accumulated storm water, oil or a mixture of the two is pumped from the containment area to a trench drain which flows to the oil/water separator.

4.2.11 Transformers A146HR, A147HR and A148HR are located at various transfer houses along the Rob Run coal belt. Each transformer is situated in a separate concrete containment area. Any accumulated rainwater is drained from the containment area in accordance with station procedures.

4.2.12 The urea dissolver tanks (A164HR and 165HR) and the urea reactor feed tank (A166HR) are located within a shared concrete containment area which also houses four granular urea silos. These silos are empty and out of service. The containment area drains to a sump which gravity drains to a wastewater collection trench that conveys collected waters to the wastewater treatment lagoons.

4.2.13 A small, 15 gallons, parts washing station (A172HR) is located outside the coal handling building. This steel unit is situated on a concrete pad which slopes to a trench drain. The trench drains flow to a sump located inside the building. Any spillage would either be contained within the trench or the building sump.

4.2.14 Lube oil reservoirs (A281HR, A282HR, A283HR, A284HR, A285HR, A286HR, A287HR, A288HR, A289HR, A290HR, A291HR and A292HR) are located outside at the base of the induced draft fan or booster fan motors. All these are within close proximity to wastewater collection trenches that convey collected waters to the wastewater treatment lagoon.

4.2.15 Numerous transformer rectifiers (A185HR – A280HR) are present in the penthouse of each precipitator. Transformer rectifiers are out of service. Minimal oil remains in the transformer rectifiers.

4.2.16 Two turbine oil tanks (A299HR and A300HR) are located within the station's main building and are used to store new and clean turbine oil. These tanks are constructed of concrete lined with steel and meet the definition of an underground tank since > 10% of the tank volume is below grade (ie: below the floor elevation of the condenser pit). However, these tanks are exempt from both federal and state UST regulations as they are field built. In 2006, an internal steel liner was installed in each tank situated so that an interstitial space was created between this new liner and the original steel surface. Monitoring of this interstitial space has however shown oil to be present and plans are currently being prepared for determining the defect(s) in the liners. Thus, contingency planning allowable under the SPCC regulations is being implemented on these tanks since they do not have secondary containment. Weekly, level measurements are taken and compared with input/output volumes to determine if unaccounted product loss is taking place.

4.2.17 A new gasoline double walled steel tank (A315HR) and a new on-road diesel double walled steel tank (A316HR) are also placed near the fly ash silos. Visual inspection, via a site glass, of the interstitial space of this double-walled steel tank is performed quarterly.

4.2.18 Two Emulsified Sulfur tanks (A350HR & A351HR) were installed at the base of Lime Silos 1 & 2. These FRP tanks are situated in a location that drains to the retention basin.

4.2.19 A new diesel double walled steel tank (A358HR) was installed at Unit 2 circulation water pumps for fire suppression. Any leak would be contained within the interstitial space of the secondary containment.

4.2.20 Four new double-walled Polyethylene tanks (A354HR)-Hydrogen Peroxide 35% or less, (A355HR)-Sodium Hydroxide, (A356HR)-Nalmet 1689 Organosulfide and (A357HR)-Ferric Chloride are located at the Landfill. Any leak would be contained within the interstitial space of the secondary containment.

4.2.21 Indirect containment is provided for all tanks contained within the station building(s) even if a secondary containment structure is present since all floor drains go to on-site treatment units such as the oil/water separator, the neutralization basin, the retention basin or the wastewater treatment lagoons.

4.3 Records of draining/removing storm water from secondary/adequate containment areas is documented and retained.

4.4 Facility drainage is designed such that undiked areas containing potential sources of pollutants (ie.; oil, chemicals, wastes, etc.) are directed to a wastewater treatment unit.

5.0 Material Inventory and Storage

5.1 Material inventory includes bulk chemicals, commercial products and raw materials.

5.2 Commercial chemicals and products kept in small quantities (under 100 gallons or 100 pounds), within the confines of the station building, may be listed or named in the plan but will not be specifically inventoried. Likewise, products purchased, stored, or used in consumer sizes/packages will not be listed. In either case, the composition and/or volume of these items do not warrant their inclusion in an emergency plan.

5.3 Raw materials will include those items used by the station that are either mined or mechanically prepared (i.e., crushed, sized, etc.)

5.4 Refer to the Material Inventory Table contained in Section III Annex 1 of this ICP. The table lists the raw and manufactured substances at the station. Potential Quantity on Site will reflect the maximum amount stored at the station due to physical storage or use/shelf life constraints. Quantity units are standard gallons, pounds, tons, etc. Storage Method, Average Use and Purpose are self-explanatory. Associated NPDES Permit Discharge lists the NPDES outfall from which the substance could discharge however, these do not specifically denote normal discharge practices.

6.0 Other Areas/Materials

6.1 Grease and oil are stored in drums and totes at various locations throughout the station. These areas can vary from one drum up to 120 drums. Typically, storage is a location that would allow any spilled or overflow material to be conveyed to the oil/water separator via a trench drain. Occasionally, storage is a location that would convey any spilled or overflow material to be conveyed to the wastewater lagoons. In this case, clean up materials (such as oil dry) are located immediately adjacent to the drums in case of a spill or overflow.

Section III – Annexes

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6.2 Coal is conveyed to the storage area by conveyer belt or truck. This storage area is bounded by an earthen curb to the west and runoff conveyance channels to the north, south and east that direct flow to the coal pile basin. Effluent from normal operations at the coal pile basin flows to the wastewater treatment lagoons and subsequently discharges to the West Fork River via NPDES permitted outlets (Outlet Nos. 001 and 002). Runoff in excess of the 10-year/24hour storm discharges through an emergency spillway in the coal pile basin (Outlet No. 005).

6.3 Coal Combustion Byproducts and Products

6.3.1 Fly ash is collected dry and stored in two concrete silos on the north side of the generator building. Much of the fly ash is subsequently transferred pneumatically to storage silos in the solid's waste processing area where it is mixed with flue gas desulfurization (FGD) sludge and lime to form a stabilized by-product referred to as fixated FGD material. The fixated FGD material and any surplus fly ash is then hauled in 100-ton off-road trucks to the Pigott's Run Disposal Facility located about 1.5 miles north of the station.

6.3.2 Bottom ash is collected with a wet system and is sluiced to six hydro bins for dewatering. The hydro bin decant water is routed to the wastewater treatment lagoons for settling out of residual solids. Bottom ash is either sold for approved beneficial uses, hauled to Pigott's Run Disposal Facility for stockpiling and subsequent sale or used in construction of the drainage layer beneath the landfill.

6.3.3 The disposal area consists of approximately 200 acres total of which approximately 120 acres are currently active. The area is used for the disposal of a variety of wastes generated at the Harrison Power Station including fly ash, bottom ash, FGD material, construction and demolition material, sediment basin cleanout material, coal pile sump clean out material, lime wastes and waste regeneration resin. Currently, storm water from the active portion of the disposal area, all leachate and low-flow storm water from the remaining portion of the site drain to a sedimentation basin prior to discharge via an NPDES permitted outfall to the West Fork River. Beginning in December 2002, a new wetlands treatment system became operational and treats flow from the sediment basin under drain, lined active disposal area leachate collection and leachate detection systems, unlined disposal area under drain and possibly drainage from an underground mine. The effluent from the wetlands treatment system combined with the existing effluent from the sedimentation basin and

discharge through the existing NPDES permitted outfall to the West Fork River.

6.4 Wastewater and surface water runoff containing suspended solids are collected from several distinct watershed subareas. These subareas include the coal pile area, the absorber area north of the generator building and the yard area surrounding the cooling towers. In the absorber area there is a network of concrete trenches with open grates that collect and convey surface runoff. The trenches also convey process wastewater from select areas inside the generator building, the effluent from the neutralization basin and the overflow and decant water from the hydro bins. These wastewaters flow to a diversion chamber located just upstream of the wastewater treatment lagoons. Typically, only one of the lagoons is in service. The treated effluent from the lagoons is discharged via NPDES permitted outlets to the West Fork River.

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	LIQUID TRANSFER PROCESS PROCEDURE	Page 1 of 7
		Revision 2
		6/19/2019

Operational Outline

FirstEnergy personnel transferring bulk liquids shall use this Procedure (FGBP-OPS-0049) unless there is an existing procedure that meets the requirements of FGBP-OPS-0049.

PREREQUISITES

- Pre-Job Briefing (FE employee and driver)
- Two-Minute Drill (FE employee and driver)
- All alarms and warning devices are functional
- All applicable level gauge systems are functional
- Review applicable sections of the Generation Personal Safety Manual

ACTION	LOC	Initials X_____
NOTE: The action "VERIFY" as used in this procedure, means "make it so if it is not".		
NOTE: Steps 1-23 shall be completed prior to Liquid transfer:		
1. ENTER the following: a. Date _____ b. Time of Procedure Initiation _____ c. Chemical Name of Liquid being transferred _____ d. Product Name of the Liquid being transferred _____ e. Location/Equipment Name _____ f. Names of FirstEnergy employee(s) _____ _____ g. Name of Vendor (List Supplier and Transporter) _____	L	X_____
2. OBTAIN a copy of the Bill of Lading/Manifest from the truck driver.	L	X_____

ACTION	LOC	Initials X_____
CAUTION: Step 3 requires Concurrent Verification by a qualified FirstEnergy Employee. (Concurrent Verifier initials the "CV" initial space)		
3. VERIFY the Bill of Lading/Manifest for the following: a. Product name on the Bill of Lading/Manifest matches the product name on the storage tank. b. Bill of Lading/Manifest identifies the compartments containing the product ordered (if less than full tanker of product). c. Percent concentration (as applicable) _____	L	X_____ CV_____ X_____ CV_____ X_____ CV_____
4. OBTAIN a copy of the current applicable SDS from the FirstEnergy SDS SharePoint site: (https://www.3eonline.com/EeeOnlinePortal/DesktopDefault.aspx?tabid=90).	L	X_____
5. REVIEW SDS for all pertinent information including: Hazards, First Aid, Fire Fighting, Accidental Release measures, Handling and Storage, Exposure Controls/Personal Protection.	L	X_____
6. UTILIZE PPE as identified in the SDS and the Generation Personal Safety Manual (GEN-SAF-0001).	L	X_____
NOTE: If safety barriers/safety tape are to be used, reference the applicable section Generation Personal Safety Manual (GEN-SAF-0001).		
7. VERIFY required safety equipment for this Liquid Transfer activity is available, functioning correctly and deployed at the job location (e.g. eyewash stations, portable/stationary gas detectors, and safety barriers).	L	X_____
NOTE: Refer to SDS and Generation Personal Safety Manual (GEN-SAF-0001) to determine applicable firefighting equipment and fire prevention practices.		
8. VERIFY a fully charged, properly rated and currently inspected fire extinguisher is available.	L	X_____

ACTION	LOC	Initials X_____
NOTE: Mark step (9) N/A if a delivery truck is not utilized.		
9. DIRECT truck driver to appropriate location and ASSIST with backing of truck, if necessary.	L	X_____
10. VERIFY the following, as applicable: a. Delivery truck, trailers, rail cars have wheels chocked, brakes engaged. b. 4-way flashers are operational. c. If in a traffic area, traffic cones and/or barricade tape are in place.	L	X_____
NOTE: Mark step (11) N/A if grounding is not required.		
11. VERIFY all applicable equipment is grounded as specified by the transporter procedure, or the SDS.	L	X_____
12. REVIEW the Emergency Shutdown Process and communication methods with all parties.	L	X_____
13. VERIFY all unprotected drains, drainage pipes that could be affected in the event of a spill are covered or plugged.	L	X_____
14. VERIFY a spill kit is located near the transfer area and contains adequate absorbent materials for spill response.	L	X_____
15. VERIFY the applicable containments have no accumulated liquid, debris or obvious damage.	L	X_____
16. VERIFY all containment drain valves are closed and/or drain plugs are in place.	L	X_____
17. VERIFY the vessel/tank shows no signs of leaking.	L	X_____
18. VERIFY the following: a. Temporary spill buckets are available, functional, and free of liquid. b. Temporary spill buckets are placed at each fill port(s) and all other temporary connections when no permanent containment exists.	L	X_____

ACTION	LOC	Initials X_____
STOP: IF ANY DAMAGED OR WORN EQUIPMENT IS IDENTIFIED IN STEP 19, STOP THIS PROCEDURE UNTIL APPROPRIATE REPAIRS ARE MADE.		
19. INSPECT all ancillary equipment - (e.g. valves, pumps, pipes, flanges, delivery hose and connections) for damaged and/or worn equipment.	L	X_____
CAUTION: Step 20 requires Concurrent Verification by a qualified FirstEnergy Employee. (Concurrent Verifier initials the "CV" initial space)		
STOP: IF THE PRODUCT/CHEMICAL NAME IN THE MANIFEST DO NOT MATCH THE LABEL ON THE FILL POINT CONNECTION, STOP THE ACTIVITY AND NOTIFY SUPERVISION.		
20. VERIFY the product/chemical name on the manifest or Bill of Lading for the liquid to be transferred matches the label on the tank and fill point connections.	L	X_____ CV_____
STOP: IF IT IS DETEMINED IN STEP 21 THAT THE TRANSFER OF THE LIQUID WILL RESULT IN THE TANK/VESSEL BEING MORE THAN 90% FILLED (UNLESS DIRECTED OTHERWISE BY SITE MANAGEMENT), STOP THE TRANSFER ACTIVITY AND NOTIFY SUPERVISION.		
21. Utilizing the "Tank Capacity Verification Worksheet", located at the end of this procedure, VERIFY the current tank/vessel volume of product and the amount of product to be transferred does not result in the tank/container being more than 90% full.	L	X_____
22. VERIFY all vents or vapor return lines are aligned correctly for filling.	L	X_____

ACTION	LOC	Initials X_____
23. VERIFY all valves on the fill line are correctly positioned for tank filling.	L	X_____
NOTE: Tanks shall be filled through a liquid tight connection.		
24. VERIFY all temporary fill connections are properly joined together.	L	X_____
25. SECURE cam locks around the hose to prevent premature loosening and disconnect.	L	X_____
26. VERIFY radio communications system is functioning.	L	X_____
27. VERIFY an effective communication method is in place with the Driver during transfer.	L	X_____
28. VERIFY the drivers unloading/transfer procedure is complete up to the step to start transferring.	L	X_____
NOTE: Steps 29 – 33 shall be utilized while the liquid is being transferred.		
 **WARNING: THE FIRSTENERGY EMPLOYEE SHALL BE PRESENT AT ALL TIMES DURING THE TRANSFER PROCESS AND IS RESPONSIBLE FOR IDENTIFYING ANY ISSUES DURING THE TRANSFER PROCESS. FE EMPLOYEE MUST KNOW HOW TO SHUT DOWN THE TRANSFER IF THE DRIVER BECOMES UNAVAILABLE. IMMEDIATELY REPORT ANY SPILLS TO THE CONTROL ROOM.**		
 **STOP: THE FIRSTENERGY EMPLOYEE HAS FULL AUTHORITY TO STOP THE LIQUID TRANSFER AND SECURE THE AREA IF ANYTHING OCCURS THAT COULD JEOPARDIZE SAFETY, THE ENVIRONMENT OR PLANT OPERATION.**		
29. NOTIFY driver to begin the Liquid Transfer.	L	X_____
30. INSPECT ancillary equipment - (e.g. valves, pumps, pipes, flanges, delivery hose and connections) for damaged and/or worn equipment.	L	X_____

ACTION	LOC	Initials X_____
31. Repeatedly INSPECT instrumentation while transferring (e.g. flow meters, pressure gauges and level gauges) to ensure instruments are operating properly and within acceptable limits.	L	X_____
32. VERIFY remote fill port and product level are monitored throughout the liquid transfer process.	L	X_____
33. INSPECT unloading equipment for unusual noise, vibrations, and/or temperature changes.	L	X_____
NOTE: Steps 34-38 Shall be completed after the Liquid is transferred.		
34. VERIFY pump(s) and valves are restored to the proper configuration for operation after unloading.	L	X_____
 **CAUTION:** Use caution while performing steps 35 and 36 to avoid spills.		
35. VERIFY all hoses/connections are properly disconnected. All hose, piping, fittings, spill buckets and connections are drained properly.	L	X_____
36. CLEAN UP any spilled material and consult with Plant Environmental personnel for disposal instructions.	L	X_____
37. RECORD the tank level by measuring after delivery. _____	L	X_____
38. RECORD time Liquid Transfer activity is complete. Time_____	L	X_____
NOTE: Return completed procedure to Supervision.		

NOTES: (INCLUDE ANY COMMENTS HERE)

TANK CAPACITY VERIFICATION WORKSHEET

The FE employee shall determine if the tank/container has sufficient available capacity. Total capacity is defined as 90% of the total tank capacity. Before performing a liquid transfer, you shall verify how many gallons make up the 90% of the total tank/container capacity and then determine the total available capacity. Ensure you include the material currently in the tank when making the calculation. (Example: If you have a 1,000-gallon tank, it can only be filled to a maximum capacity of 900 gallons. If there is already 300 gallons of product in the tank you can only add an additional 600 gallons.)

Fill out the following: Utilizing the Tank Capacity Chart

A) Total Tank/Container Capacity: _____ gallons

B) 90% of the Total Tank/Container Capacity: _____ gallons / (A x 0.9)

C) Current Tank Volume: _____ gallons

D) Available Tank/Container Capacity: _____ gallons / (B – C) (**Do not fill the tank over 90% of the Total Tank/Container Capacity)**

E) Amount of product being transferred: _____ gallons / The “E” value must be equal to or less than the “D” value.

Is there sufficient available capacity? YES or NO (If you circled “NO” do not proceed with the transfer).

HARRISON POWER STATION ICP

Section III – Annexes

Annex 8 – Regulatory Compliance and Cross-Reference Matrices

This Integrated Contingency Plan (ICP) consolidates the various environmental response plans required by federal, state and local regulations into one all-encompassing plan. The concept and outline (Section I through Section III Annex 8) of an ICP was published in the Federal Register on June 5, 1996. This ICP is intended to comply with the following regulations and a cross-reference for these is provided in the attached matrix:

- RCRA (40 CFR Part 264 Subpart D, 40 CFR Part 265 Subpart D, 40 CFR 279.52(b)
- EPA's Oil Pollution Prevention Regulation (ie: Spill Prevention, Control and Countermeasures (SPCC))(40 CFR 112)

It should be noted that the matrix entries for the SPCC Regulations does not reflect the recently promulgated regulations. Page 5 of this section contains the current regulatory citations as well as cross-reference.

CERTIFICATION

This ICP, which includes the elements of 40 CFR 112, has the full approval of management with the authority to commit resources.

Printed Name of: Gary J. Dinzeo
Director, Harrison Power Station

signature

Date: 1 / 27 / 2021

I hereby certify that I have examined this facility and am familiar with the above-referenced citations. I attest that this plan has been prepared in accordance with good engineering practices, with consideration of applicable industry standards and is intended to comply with the above-referenced citations.

Printed Name of: Daniel C. Havalo
Registered Professional Engineer

signature

Date: 01 / 27 / 2021

Registration No: E-81791 (OH)

HARRISON POWER STATION ICP

Section III – Annexes

Annex 8 – Regulatory Compliance and Cross-Reference Matrices

Section III – Annexes

Annex 9 – Applicability of Substantial Harm Criteria

Does the facility transfer oil over-water[1] to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes___ No XX

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and, within any storage area, does the facility lack secondary containment[2] that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?

Yes___ No XX

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at distance[2] (as calculated using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?[2]

Yes___ No XX

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance[2] (as calculated using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake?[2]

Yes___ No XX

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill[2] in an amount greater than or equal to 10,000 gallons within the last five years?

Yes___ No XX

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining information, I believe that the submitted information is true, accurate, and complete.

Signature: _____

Name (Please type or print): Daniel C. Havalo

Title: Supervisor, Water, SPCC & Environmental Services

Date: -01/27/2021

[1]Explanations of the above-referenced terms can be found in Appendix C to this part. If a comparable formula to the ones contained in Attachment C-III is used to establish the appropriate distance to fish and wildlife and sensitive environments or public drinking water intakes, documentation of the reliability and analytical soundness of the formula must be attached to this form.

[2]For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to this Part, section 10, for availability) and the applicable ACP.

HARRISON POWER STATION ICP

Section III – Annexes

Annex 10 – Spill Prevention, Control and Countermeasures Plan Elements and Cross-Reference

This section includes information required by the SPCC regulations (40 CFR 112) that are not found elsewhere in the ICP.

Compliance Inspection Plan - Review and Revision Page

In accordance with 40 CFR 112.5(b) a review and evaluation of this SPCC Plan is conducted at least once every five years. As a result of this review and evaluation, Harrison Power Station will amend the SPCC Plan within six months of the review to include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a discharge from the facility and, (2) if such technology has been field-proven at the time of review. Any amendment to the SPCC Plan shall be certified by a Professional Engineer within six months after a change in the facility design, construction, operation, or maintenance occurs which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.

The authorized Facility Representative will sign and indicate the reviews below that do not result in an amendment.

	Review Dates	Signature
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____

HARRISON POWER STATION ICP

Section III – Annexes

Annex 10 – Spill Prevention, Control and Countermeasures Plan Elements and Cross-Reference

Facility Description

a. Facility Operations

The Harrison Power Station is a coal fueled steam electric power generating facility located on the south bank of the West Fork River in Haywood, Harrison County, West Virginia. Refer to the Table of Contents for engineering drawings and maps, location of the site, property boundaries, and siting detail.

The station consists of three units, each with a steam boiler and turbine/generator. Unit No. 1 began commercial operation in 1972, Unit No. 2 in 1973 and Unit No. 3 in 1974. The primary waste products are fly ash, bottom ash, scrubber sludge and certain wastewater discharges. Coal is brought into the station by truck or rail. Bulk oil is not delivered or transferred over water and is delivered by truck.

A 12,000-gallon aboveground storage tank, located in the coal handling area, for use as equipment fuel. Numerous other aboveground oil storage containers and oil filled electrical equipment (ie., transformers and transformer rectifiers) are located inside and outside the station's main building, in the coal handling area and along the Rob Run Coal Belt. These are listed on the Tank List in Section III Annex 1 of this ICP.

The facility is manned 24 hours/7 days a week. Normal hours of the office are 7AM to 3:30 PM and deliveries are accepted from 7AM to 3PM.

b. Drainage Pathway and Distance to Navigable Waters

The facility boundaries are next to the banks of the West Fork River. There are NPDES permitted discharges to navigable water and due to the close proximity to the West Fork River, there is the possibility that product could enter the river if both the tank/container and secondary/appropriate containment would fail.

Section III – Annexes

Annex 10 – Spill Prevention, Control and Countermeasures Plan Elements and Cross-Reference

Potential Spill Predictions, Volumes, Rates and Control

In general, the direction of a spill would be the secondary containment of the tank.

This facility is located on the banks of the West Fork River. There are NPDES discharges to navigable water and due to the proximity of the river, there is a possibility that product could enter the river if both the tank and the secondary containment would fail. The direction of flow that must be of primary concern is towards the direction to the river. If there is a nearby storm water drain, the technical drawing shows the prediction of flow in that direction.
The flow rate of a potential discharge varies from the possibility of a small leak (< 1 quart/month) from a seal or gasket to >12,000 gallons/hour for a sudden, complete failure of the largest oil bulk container storage and simultaneous failure of the secondary containment.

Source	Type of Failure	Volume (gallons)	Flow rate (gallons/hr)	Direction of Flow	Containment[1] (gallons)
Aboveground Storage					
A20HR Kerosene	rupture, leakage, overfill	4,000	4,000	north	4,600
A39HR Used Oil/Degreaser	rupture, leakage, overfill	1,000	1,000	north	[2]
A298HR Transformer Oil	rupture, leakage	27,600	27,600	north	84,700[3]
A41HR Transformer Oil	rupture, leakage	29,900	29,900	north	89,200[3]
A313HR Transformer Oil	rupture, leakage	29,542	29,542	north	89,200[3]
A43HR Transformer Oil	rupture, leakage	2,880	2,880	north	84,700[3]
A44HR Transformer Oil	rupture, leakage	2,880	2,880	north	89,200[3]
A45HR Transformer Oil	rupture, leakage	2,880	2,880	north	89,200[3]
A46HR Transformer Oil	rupture, leakage	2,880	2,880	north	84,700[3]
A47HR Transformer Oil	rupture, leakage	2,880	2,880	north	89,200[3]
A48HR	rupture, leakage	2,880	2,880	north	89,200[3]

Transformer Oil					
A49HR Transformer Oil	rupture, leakage	4,750	4,750	north	10,800
A50HR Transformer Oil	rupture, leakage	4,750	4,750	north	9,200
A53HR No. 2 Fuel Oil	rupture, leakage, overfill	12,000	12,000	north	13,600
A54HR Transformer Oil	rupture, leakage	3,660	3,660	north	19,700
A55HR Transformer Oil	rupture, leakage	3,660	3,660	north	19,500
A56HR Transformer Oil	rupture, leakage	3,660	3,660	north	18,400
A57HR Transformer Oil	rupture, leakage	4,185	4,185	north	19,300
A58HR Transformer Oil	rupture, leakage	4,185	4,185	north	19,300
A128HR Transformer Oil	rupture, leakage	333	333	north	1,100
A146HR Transformer Oil	rupture, leakage	393	393	south	440
A147HR Transformer Oil	rupture, leakage	75	75	south	210
A148HR Transformer Oil	rupture, leakage	286	286	south	510
A281HR-A292HR Lube Oil	rupture, leakage, overfill	110	110	north	[2] Wastewater treatment
A40HR Transformer Oil	rupture, leakage	24,600	24,600	north	33,000
A315HR Gasoline	rupture, leakage, overfill	1,500	1,500	north	1,500[5]
A316HR Diesel	rupture, leakage, overfill	1,000	1,000	north	1,000[5]
A358HR Diesel	rupture, leakage, overfill	700	700	north	700[5]
All Containers inside station building	rupture, leakage, overfill	Max. 12,200	Max. 12,000	varies	[2] Wastewater treatment

Section III – Annexes

Annex 10 – Spill Prevention, Control and Countermeasures Plan Elements and Cross-Reference

Truck Loading/Unloading Operations					
Source	Type of Failure	Volume of truck compart. (gallons)	Flow rate (gallons/hr)	Direction of Flow	Containment (gallons)
Unloading area for A20HR (kerosene)	Rupture, piping failure, valve failure	5,000	5,000	north	2 Wastewater treatment
Unloading area for A53HR (12,000 gal diesel)	Rupture, piping failure, valve failure	5,000	5,000	north	14,200
Unloading area for A315HR Gasoline	Rupture, piping failure, valve failure	1,500	1,500	north	Double Walled
Unloading area for A316HR Diesel	Rupture, piping failure, valve failure	1,000	1,000	north	Double Walled
Unloading area for lube oil	Rupture, piping failure, valve failure	5,000	5,000	north	4
A358HR Diesel	Rupture, piping failure, valve failure	700	700	north	Double Walled

1 The containment volume shown is the volume available for oil storage after consideration for sufficient freeboard (ie, precipitation from the 25-year 24-hour rainfall event, 4.65 inches).

2 The container is in close proximity to wastewater collection trench(s) that convey flow to a wastewater treatment unit (ie. oil/water separator, wastewater lagoons, solids waste processing retention basin, etc.).

3 Each unit has a main transformer (A298HR, A41HR and A42HR), an "A" auxiliary transformer (A43HR, A44HR and A45HR) and a "B" auxiliary transformer (A46HR, A47HR and A48HR). There is valved piping that connects the containment of each "B" to the corresponding "A", and the "A" containment to the main transformer containment. These valves are typically left open and any accumulated storm water is pumped from the main transformer containment areas.

4 The receiving nozzle for this indoor tank is located outside the building. Modification of a concrete pad and curbing that is capable of containing the largest compartment in the delivery truck was completed in 2011.

5 Double Walled Tank

HARRISON POWER STATION ICP

Section III – Annexes

Annex 11 – NPDES Discharge Monitoring Requirements and Groundwater Requirements

NPDES			Permit #
2-89-001-01	000	Intake	WV0005339
2-89-001-02	001	Waste Water Treatment	WV0005339
2-89-001-03	002	Waste Water Treatment	WV0005339
2-89-001-04	101	Waste Detention Basin	WV0005339
2-89-001-05	004	Sewage	WV0005339
2-89-001-06	003	Screen Backwash Water	WV0005339
2-89-001-07	005	Collection Basin Overflow	WV0005339
2-89-001-08	006	Cooling Tower Blowdown	
2-89-001-09	001	In-Stream Silt Barrier	WV0075795
2-89-001-10	002	Sedimentation Pond #2	WV0075795
2-89-001-11	004	Stormwater Runoff, Lr Trib Valley Disp Area	WV0075795
2-89-001-12	005	Stormwater Runoff, Main Valley Disp Area	WV0075795
2-89-001-13	006	Leachate Detection Zone	WV0075795
2-89-001-14	008	Surface Impoundment #1	WV0075795
2-89-001-15	009	Main Valley Disposal Area	WV0075795
2-89-001-16	108	Influent to Surface Impoundment #1	WV0075795
2-89-001-17	006	Storm Water Outlet	WV0005339
2-89-001-18	007	Storm Water Outlet	WV0005339
2-89-001-19	010	Storm Water Outlet	WV0005339
2-89-001-20	008	Storm Water Outlet	WV0005339
2-89-001-21	009	Storm Water Outlet	WV0005339
2-89-001-22	011	Storm Water Outlet	WV0005339
2-89-001-43	012	Storm Water Outlet	WV0005339
2-89-001-44	013	Storm Water Outlet	WV0005339
	608	Leachate Detection Underlay	WV0075795
2-89-001-24	010	010 Culvert #11 - Upper Haul	WV0075795
2-89-001-25	011	011 Culvert from TRK MNTN	WV0075795
2-89-001-26	012	012 Haul road drain culvert near track	WV0075795
2-89-001-27	013	013 Haul Rd Culvert by Dirt Road for	WV0075795
2-89-001-28	014	014 Haul Rd. Culvrt Mid WF Brdg-Di	WV0075795
2-89-001-29	015	015 Haul Rd Culvert Closest to WF B	WV0075795
2-89-001-30	016	016 Haul Rd Culvert just below C'ha	WV0075795
2-89-001-31	017	017 Disch. From Soil Stockpile - Sed T	WV0075795
2-89-001-32	708	708 Manhole - 008 prior to MP6508	WV0075795
2-89-001-33	011/012/016	011, 012, 016 composite by time	WV0075795
2-89-001-34	013/014/015	013, 014, 015 composite by time	WV0075795
2-89-001-35	018	018 Main Valley Disp. Area, former O	WV0075795
2-89-001-36	009	009 72' Pipe, Main Valley Disp	WV0075795
2-89-001-37	008	008 Surface Impoundment #1	WV0075795
2-89-001-38	020	020 24" HDPE Pipe Surface Impoundment	WV0075795
2-89-001-39	021	021 SW Sed Basin A/B	WV0075795
2-89-001-40	022	022 SW Sed Basin C- below wetlands	WV0075795
2-89-001-41	023	023 SW Sed Trap #11	WV0075795
2-89-001-42	102	Metal Wash Water	WV0005339
2-89-001-43	012	012 Storm Water Outlet	WV0005339
2-89-001-44	013	013 Storm Water Outlet	WV0005339

Ground Water / Stream Monitoring			Permit #
2-89-002-01	STR1	Pigotts Run at Robinson Run	WV0075795
2-89-002-02	STR2	Robinson Run Upstream	WV0075795
2-89-002-03	MP508	Leach Det Sys Stages I & II Low Trib Valley Disp Area	WV0075795
2-89-002-04	MP408	Leach Col Sys Stages I & II Low Trib Valley Disp Area	WV0075795
2-89-002-05	MW1	Upgradient	WV0075795
2-89-002-06	MW2	Downgradient	WV0075795
2-89-002-07	MW3	Downgradient	WV0075795
2-89-002-08	MW4	Downgradient	WV0075795
2-89-002-09	MW5	Upgradient	WV0075795
2-89-002-10	MW6	Downgradient	WV0075795
2-89-002-11	MW7	Downgradient	WV0075795
2-89-002-14	MW10	N/A	WV0075795
2-89-002-15	MW11	N/A	WV0075795
2-89-002-16	LM02/308	Leach Det Sys Phase I Low Trib Valley Disp Area	WV0075795
2-89-002-17	LM01/208	Leach Coll Sys Phase I Lower Trib Valley Disp Area	WV0075795
2-89-002-18	LM11/608	Leach Det Sys Underlying Surf Impoundment #1	WV0075795
2-89-002-19	MW15	Downgrade	WV0075795
2-89-002-20	MW16	Downgrade	WV0075795
2-89-002-21	MW18	Downgradient LTV	WV0075795
2-89-002-22	MW17	Downgradient LTV	WV0075795
2-89-002-23	MW701	GW Variance Well - 47C SR57A	WV0075795
2-89-002-26	MW711	GW Variance Well - 47C SR57A	WV0075795
2-89-002-27	LM05/908		WV0075795
2-89-002-28	LM06/808		WV0075795
2-89-002-29	LM13		WV0075795
2-89-002-30	LM14		WV0075795
2-89-002-31	LM15		WV0075795
2-89-002-32	LM16		WV0075795
2-89-002-33	LM17		WV0075795
2-89-002-34	LM18		WV0075795
2-89-002-35	LM19		WV0075795
2-89-002-36	LM20		WV0075795
2-89-002-37	LM21		WV0075795
2-89-002-38	LM12/1008		WV0075795
2-89-002-39	MW716	GW Variance Well - 47C SR57A	WV0075795
2-89-002-40	MW717	GW Variance Well - 47C SR57A	WV0075795
2-89-002-41	LM07/1108		WV0075795
2-89-002-42	LM08/1208		WV0075795
2-89-002-43	LM10/1408		WV0075795
2-89-002-44	LM09/1308		WV0075795
2-89-002-45	MW19	CCR	WV0075795
2-89-002-46	MW20	CCR	WV0075795
2-89-002-47	LC46		WV0075795
2-89-002-48	LD46		WV0075795

HARRISON POWER STATION ICP

Section III – Annexes

Annex 12 – SARA Section 311 and 312 Reporting

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

☑ **Annual** ☐ **Update** ☐ **Revised** ☑ **Facility Information has changed from the last submission**

Facility Identification

Facility ID:	9393	LEPC:	Harrison
Facility Name:	Harrison Power Station	Lat/Long:	39.38389/-80.331677
Facility Type:	Facility		
Maximum Occupants:	500		
Physical Location:	State Route 20, Haywood, WV 26134	Nature of Business:	Fossil Fuel Electric Power Generation
County:	Harrison	NAICS Code:	221112
Fire Department:	CLARKSBURG FIRE DEPARTMENT	SIC Code:	
Phone:	330-436-1530	Dun and Brad No:	007944812

☑ Manned ☐ Unmanned

Subject to EPCRA Section 312 (Annual Inventory)?	☑ Yes ☐ No
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)?	☑ Yes ☐ No
Subject to Section 112r of Clean Air Act (CAA)?	☐ Yes ☑ No
RMP Facility ID:	
Subject to EPCRA Section 313 (Toxic Release Inventory - TRI)?	☑ Yes ☐ No
TRI Facility ID: 26366HRRSNRTE20	
Are you required to register an Above-Ground Storage Tank (AST) ?	☑ Yes ☐ No
Permit ID: PS017-3350	
Are you a CFATS Facility?	☐ Yes ☑ No
Are you subject to WV Code Section 15-5C (the 15 min Oil and Gas Reporting Rule)?	☐ Yes ☑ No

Owner/Operator Details

Name: First Energy
Address: 341 White Pond Drive
Akron, OH 44320, United States
Phone: 330-436-1530 Email: efoster@firstenergycorp.com

Parent Company Details

Name:
Dun and Brad No:
Address:
Phone: Email:

Tier II Information Contact

Name: Eric Foster
Title: Tier II Information Contact
Phone: 330-436-1530 24 Hr.Phone: 330-810-4102
Email: efoster@firstenergycorp.com

Mailing Address

Company Name: First Energy
Attention:
Street Address 1: State Route 20
Street Address 2:
City: Haywood State: WV
Zip: 26134 Phone: 330-436-1530
Country: United States

Facility Emergency Planning Coordinator

Name: Gary Dinzeo
Title: Emergency Coordinator
Phone: 304-584-2233 24 Hr.Phone: 304-669-1604
Email: gdinzeo@firstenrgycorp.com

Emergency Contacts

Name	Title	Phone	24 Hr.Phone	Email
Julie Ford	Senior Scientist	304-584-2422	724-331-9883	jford@firstenergycorp.com
Gary Dinzeo	Emergency Coordinator	304-584-2329	304-669-1604	gdinzeo@firstenergycorp.com

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in pages one through 18, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate and complete.

Megan Walters,Authorized Representative	2/24/2020 6:35:15 PM	317-450-4557	
Name and official title of owner/operator or authorized representative	Date Signed	Telephone Number	Signature

Optional Attachments

- ☑ Site Plan
- ☐ Site Coordinate Abbreviations
- ☐ Other Safeguard measures
- ☐ Facility Emergency Response Plan

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87439 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 13362-16-8** Trade Secret: ☐ **Chemical Name: Ammonium Hydroxide** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☑ Acute toxicity (any route of exposure) ☐ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☑ Specific target organ toxicity (single or repeated exposure)

Inventory	Storage Codes & Location
Max Daily Amt (lbs): 5998 Max Daily Amt Code: 05 Avg Daily Amt (lbs): 999 Avg Daily Amt Code: 03 Max Amt in Largest Container (lbs): 4999 No of days onsite: 365	

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[O]Tote bin	[1]Ambient pressure	[4]Ambient temperature	1st floor between 1&2 powdex		999
[O]Tote bin	[1]Ambient pressure	[4]Ambient temperature	East of Sedimentation Basin		4999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87440 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 1305-62-0** Trade Secret: ☐ **Chemical Name:** Calcium Hydroxide (including lime) EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☑ Corrosive to metal ☐ Explosive ☑ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☑ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☑ Acute toxicity (any route of exposure) ☐ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☐ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory

Max Daily Amt (lbs): 1000000000

Max Daily Amt Code: 13

Avg Daily Amt (lbs): 1000000000

Avg Daily Amt Code: 13

Max Amt in Largest Container (lbs): 1000000000

No of days onsite: 365

Storage Codes & Location

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[C]Tank inside building	[1]Ambient pressure	[4]Ambient temperature	Under lime storage silos		1000000000
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	East of unit 1 absorber module		1000000000
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	Northwest of Unit 3 absorber module		10000000000
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	Southwest of Unit 2 Absorber module		1000000000

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87441 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 1305-78-8** Trade Secret: ☐ **Chemical Name: Calcium Oxide** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☑ Pure ☐ Mix ☑ Solid ☐ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☑ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☑ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☑ Acute toxicity (any route of exposure) ☑ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory

Max Daily Amt (lbs): 50099998

Max Daily Amt Code: 13

Avg Daily Amt (lbs): 50099996

Avg Daily Amt Code: 13

Max Amt in Largest Container (lbs): 10000000

No of days onsite: 365

Storage Codes & Location

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Lime Silo #1 Lime Silo #1		10000000
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Solid waste process		99999
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Lime silo #2 Lime Silo #2		10000000
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Fixation Lime #1		9999999
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Fixation Lime #2		10000000
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Fixation IIme #3		10000000

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87456 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 124-38-9** Trade Secret: ☐ **Chemical Name: carbon Dioxide** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☑ Pure ☐ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☑ Gas under pressure ☑ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☐ Acute toxicity (any route of exposure) ☑ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☐ Serious eye damage or eye irritation ☐ Simple asphyxiant ☐ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory	Storage Codes & Location
Max Daily Amt (lbs): 4999 Max Daily Amt Code: 04 Avg Daily Amt (lbs): 4999 Avg Daily Amt Code: 04 Max Amt in Largest Container (lbs): 4999 No of days onsite: 365	

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	South of main bldg.		4999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87442 Check if Chemical Information is changed from the last submission: ☑ **CAS #:** **N/A** Trade Secret: ☐ **Chemical Name:** **Fly Ash** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☑ Solid ☐ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☑ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☐ Acute toxicity (any route of exposure) ☐ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory

Max Daily Amt (lbs): 1000000000

Max Daily Amt Code: 13

Avg Daily Amt (lbs): 1000000000

Avg Daily Amt Code: 13

Max Amt in Largest Container (lbs):

No of days onsite: 365

Storage Codes & Location

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Fly Ash Between Unit 1		1000000000
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Fly Ash Between Unit #1		1000000000
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Solid Waste Processing		999999999
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Solid Waste processing		999999999
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Solid Waste Porcessing		999999999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87443 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 68476-34-6** Trade Secret: ☐ **Chemical Name: Fuel Oil #2** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☑ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☑ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☑ Acute toxicity (any route of exposure) ☑ Aspiration hazard ☑ Carcinogenicity ☐ Germ cell mutagenicity ☑ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☑ Specific target organ toxicity (single or repeated exposure)

Inventory

Max Daily Amt (lbs): 9999999

Max Daily Amt Code: 12

Avg Daily Amt (lbs): 9999999

Avg Daily Amt Code: 12

Max Amt in Largest Container (lbs): 9999999

No of days onsite: 365

Storage Codes & Location

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	Intake Structure		9999999
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	1st floor		9999999
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	Inside Electrical Equip Room		1928
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	Solid Waste Fixation Area		7010

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87444 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 8006-61-9** Trade Secret: ☐ **Chemical Name: Gasoline Unleaded** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☑ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☐ Acute toxicity (any route of exposure) ☑ Aspiration hazard ☑ Carcinogenicity ☑ Germ cell mutagenicity ☑ Hazard Not Otherwise Classified (HNOC) ☑ Reproductive toxicity ☐ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☑ Specific target organ toxicity (single or repeated exposure)

Inventory	Storage Codes & Location
Max Daily Amt (lbs): 99999 Max Daily Amt Code: 09 Avg Daily Amt (lbs): 99999 Avg Daily Amt Code: 09 Max Amt in Largest Container (lbs): 99999 No of days onsite: 365	

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	West of solid waste		99999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87445 Check if Chemical Information is changed from the last submission: ☑ **CAS #:** **N/A** Trade Secret: ☐ **Chemical Name:** **Hydrogen peroxide** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☑ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☑ Acute toxicity (any route of exposure) ☐ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☐ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory

Max Daily Amt (lbs): 10000

Max Daily Amt Code: 06

Avg Daily Amt (lbs): 10000

Avg Daily Amt Code: 06

Max Amt in Largest Container (lbs): 10000

No of days onsite: 9

Storage Codes & Location

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	Landfill Influent to sedimentation pond		50000
[O]Tote bin	[1]Ambient pressure	[4]Ambient temperature	East of Sediment Basin		10000

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87446 Check if Chemical Information is changed from the last submission: ☑ **CAS #:** **N/A** Trade Secret: ☐ **Chemical Name:** **Kerosene** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☑ Acute toxicity (any route of exposure) ☑ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☑ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☐ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory	Storage Codes & Location
Max Daily Amt (lbs): 99999 Max Daily Amt Code: 09 Avg Daily Amt (lbs): 99999 Avg Daily Amt Code: 09 Max Amt in Largest Container (lbs): No of days onsite: 365	

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	East end of oily waste bldg.		99999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87447 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 7439-92-1** Trade Secret: ☐ **Chemical Name: Lead** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☑ Pure ☐ Mix ☑ Solid ☐ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☑ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☑ Acute toxicity (any route of exposure) ☐ Aspiration hazard ☑ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☑ Reproductive toxicity ☐ Respiratory or skin sensitization ☐ Serious eye damage or eye irritation ☐ Simple asphyxiant ☐ Skin corrosion or irritation ☑ Specific target organ toxicity (single or repeated exposure)

Inventory

Max Daily Amt (lbs): 4999

Max Daily Amt Code: 04

Avg Daily Amt (lbs): 4999

Avg Daily Amt Code: 04

Max Amt in Largest Container (lbs): 4999

No of days onsite: 365

Storage Codes & Location

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	Telephone PBX room		4999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor unit 3 UPS		4999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	West end of Plant EE		4999
[R]Other Desc: Other Desc: bATTERY	[1]Ambient pressure	[4]Ambient temperature	1st floor osuth of unit 1		4999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1sr floor south of unit 1.		4999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor south of unit 1		4999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor osuth of unit 2		4999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor unit 3		4999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor north of unit 1		4999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87448 Check if Chemical Information is changed from the last submission: ☑ **CAS #:** **N/A** Trade Secret: ☐ **Chemical Name:** **Nalco 1689 (Nalmet)** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☐ Acute toxicity (any route of exposure) ☐ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☐ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☐ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory

Max Daily Amt (lbs): 24999

Max Daily Amt Code: 06

Avg Daily Amt (lbs): 24999

Avg Daily Amt Code: 06

Max Amt in Largest Container (lbs):

No of days onsite: 365

Storage Codes & Location

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	Landfill pond		2599
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	Metal Wash Clarifier Unit #2		24999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	North of sedimentation basin		24999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	East of sed. basin		24999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87454 Check if Chemical Information is changed from the last submission: ☑ **CAS #:** **N/A** Trade Secret: ☐ **Chemical Name:** Nalco 71264 EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☐ Acute toxicity (any route of exposure) ☐ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☐ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory	Storage Codes & Location
Max Daily Amt (lbs): 24999 Max Daily Amt Code: 06 Avg Daily Amt (lbs): 24999 Avg Daily Amt Code: 06 Max Amt in Largest Container (lbs): No of days onsite: 365	

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[O]Tote bin	[1]Ambient pressure	[4]Ambient temperature	Landfill		24999
[O]Tote bin	[1]Ambient pressure	[4]Ambient temperature	East of Sed. basin		24999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87450 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 2809-21-4** Trade Secret: ☐ **Chemical Name: Nalco Sure Cool** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☑ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☑ Acute toxicity (any route of exposure) ☐ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory	Storage Codes & Location
Max Daily Amt (lbs): 99999 Max Daily Amt Code: 09 Avg Daily Amt (lbs): 99999 Avg Daily Amt Code: 09 Max Amt in Largest Container (lbs): 99999 No of days onsite: 365	

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[C]Tank inside building	[1]Ambient pressure	[4]Ambient temperature	Biocide Bldg. Biocide bldg.		99999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87451 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 7681-52-9** Trade Secret: ☐ **Chemical Name: Sodium Hypochlorite** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☐ Acute toxicity (any route of exposure) ☐ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory	Storage Codes & Location
Max Daily Amt (lbs): 99999 Max Daily Amt Code: 09 Avg Daily Amt (lbs): 99999 Avg Daily Amt Code: 09 Max Amt in Largest Container (lbs): 99999 No of days onsite: 365	

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[O]Tote bin	[1]Ambient pressure	[4]Ambient temperature	North Side of Biocide bldg		99999
[O]Tote bin	[1]Ambient pressure	[4]Ambient temperature	Near sewage Plant Bldg		99999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87452 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 7704-34-9** Trade Secret: ☐ **Chemical Name: Sulfur (emulsified)** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☐ Pure ☑ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☑ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☐ Acute toxicity (any route of exposure) ☑ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☑ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory

Max Daily Amt (lbs): 499999

Max Daily Amt Code: 10

Avg Daily Amt (lbs): 49999

Avg Daily Amt Code: 07

Max Amt in Largest Container (lbs): 49999

No of days onsite: 365

Storage Codes & Location

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Lime silo station		499999
[H]Silo	[1]Ambient pressure	[4]Ambient temperature	Lime silo stations		499999

Tier II Emergency and Hazardous Chemical Inventory

Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

Chemical Description	Physical Hazards	Health Hazards
Chemical ID: 87453 Check if Chemical Information is changed from the last submission: ☑ **CAS #: 7664-93-9** Trade Secret: ☐ **Chemical Name: Sulfuric acid** EHS: ☐ Contains EHS: ☐ Exceeds TPQ: ☐ EHS Name: ☑ Pure ☐ Mix ☐ Solid ☑ Liquid ☐ Gas Chemical Added On: The chemical is below reporting threshold: ☐	☐ Combustible dust ☐ Corrosive to metal ☐ Explosive ☐ Flammable (gases, aerosols, liquids, or solids) ☐ Gas under pressure ☐ Hazard Not Otherwise Classified (HNOC) ☐ In contact with water emits flammable gas ☐ Organic peroxide ☐ Oxidizer (liquid, solid or gas) ☐ Pyrophoric (liquid or solid) ☐ Pyrophoric gas ☐ Self-heating ☐ Self-reactive	☐ Acute toxicity (any route of exposure) ☑ Aspiration hazard ☐ Carcinogenicity ☐ Germ cell mutagenicity ☐ Hazard Not Otherwise Classified (HNOC) ☐ Reproductive toxicity ☐ Respiratory or skin sensitization ☑ Serious eye damage or eye irritation ☐ Simple asphyxiant ☑ Skin corrosion or irritation ☐ Specific target organ toxicity (single or repeated exposure)

Inventory

Max Daily Amt (lbs): 999999

Max Daily Amt Code: 11

Avg Daily Amt (lbs): 999999

Avg Daily Amt Code: 11

Max Amt in Largest Container (lbs): 999999

No of days onsite: 365

Storage Codes & Location

Container Type	Pressure	Temperature	Storage Location	Description	Max Amt At Location(lbs)
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	Telephone BTX room		4999999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor south of unit 1		999999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor north of unit 3		999999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor north of unit 1		999999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	West end of plant EE		999999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor south of unit 2		999999
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	West of cooling tower		999999
[R]Other Desc: Other Desc: Other	[1]Ambient pressure	[4]Ambient temperature	1st floor south of unit 1		999999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor unit 3 UPS		999999

Tier II Emergency and Hazardous Chemical Inventory

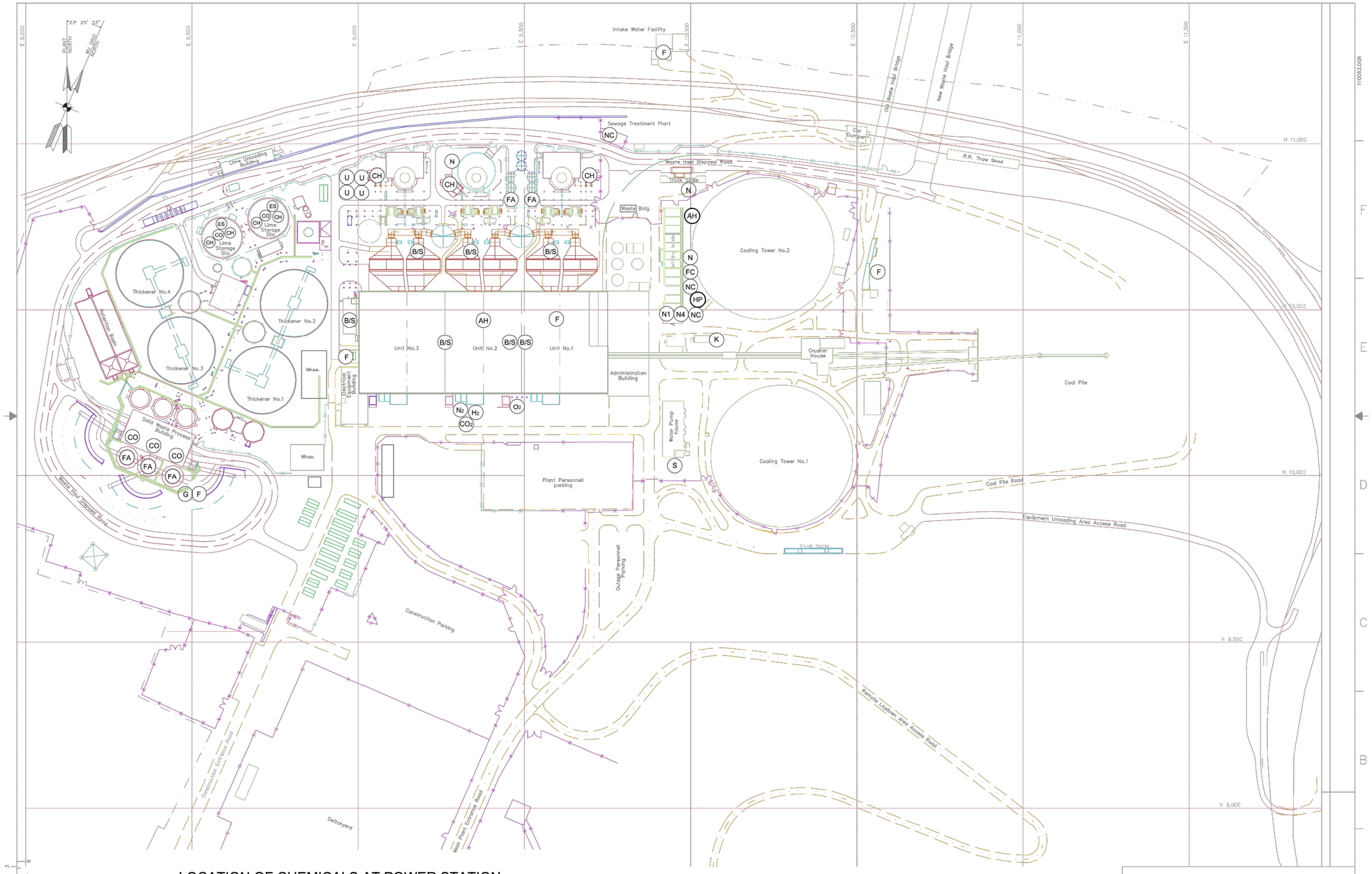
Facility Name: Harrison Power Station Facility ID: 9393

Reporting Period From January 1, 2019 to December 31, 2019

[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor rnorth of unit 1		999999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor unit 1		999999
[C]Tank inside building	[1]Ambient pressure	[4]Ambient temperature	Demin area		999999
[R]Other Desc: Other Desc: Battery	[1]Ambient pressure	[4]Ambient temperature	1st floor osuth ofunit 1		999999
[A]Above ground tank	[1]Ambient pressure	[4]Ambient temperature	1st floor south of unit 1		999999
[R]Other Desc: Other Desc: bATTERY	[1]Ambient pressure	[4]Ambient temperature	1st floor south of uit 1		999999

Chemical Amount Range Code & Description

#	Code	Amount Range
1	01	[01] 0-99
2	02	[02] 100-499
3	03	[03] 500-999
4	04	[04] 1,000-4,999
5	05	[05] 5,000-9,999
6	06	[06] 10,000-24,999
7	07	[07] 25,000-49,999
8	08	[08] 50,000-74,999
9	09	[09] 75,000-99,999
10	10	[10] 100,000-499,999
11	11	[11] 500,000-999,999
12	12	[12] 1,000,000-9,999,999
13	13	[13] 10,000,000- Greater than 10 million



LOCATION OF CHEMICALS AT POWER STATION

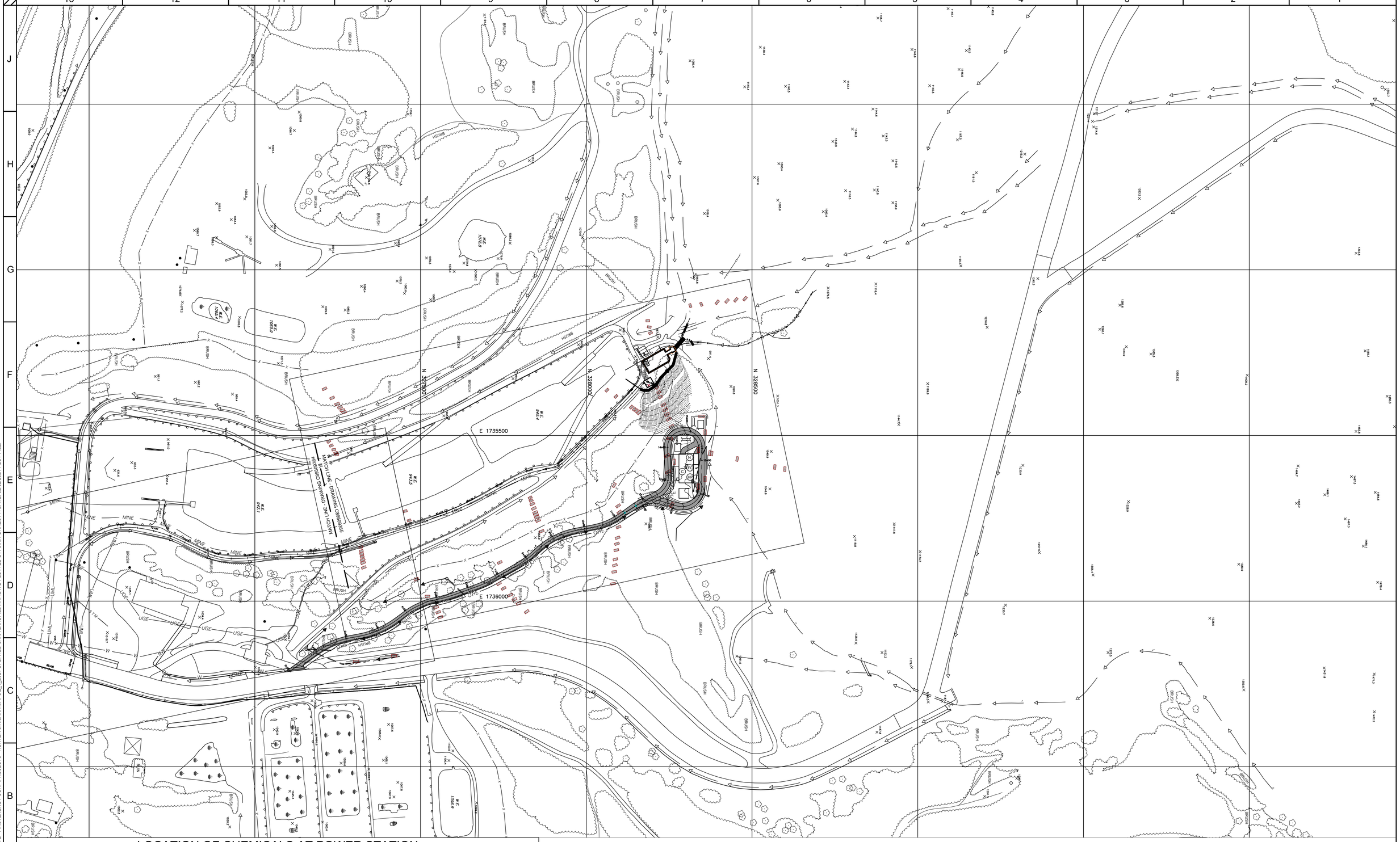
AH AMMONIUM HYDROXIDE	B LEAD ACID BATTERIES	NC SODIUM HYPOCHLORITE
CH CALCIUM HYDROXIDE	N NALCO 1689	S SULFURIC ACID
CO CALCIUM OXIDE	N1 NALCO 3DT121	FC FERRIC CHLORIDE TOTES
F #2 FUEL OIL	N4 NALCO 1393	H_2 HYDROGEN
FA FLY ASH	CO_2 CARBON DIOXIDE	N_2 NITROGEN
G GASOLINE	O_2 OXYGEN	U UREA
K KEROSENE	HP HYDROGEN PEROXIDE	ES EMULSIFIED SULFUR

NOT TO SCALE

WORK REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY	DISC ENG	ENG MGR

HARRISON POWER STATION
HAYWOOD, WV 26366

LATITUDE 39° 23' 01" N
LONGITUDE 80° 18' 58" W



LOCATION OF CHEMICALS AT POWER STATION

AH	AMMONIUM HYDROXIDE	B	LEAD ACID BATTERIES	NC	SODIUM HYPOCHLORITE
CH	CALCIUM HYDROXIDE	N	NALCO 1689	S	SULFURIC ACID
CO	CALCIUM OXIDE	N1	NALCO 3DT121	FC	FERRIC CHLORIDE TOTES
F	#2 FUEL OIL	N4	NALCO 1393	H_2	HYDROGEN
FA	FLY ASH	CO_2	CARBON DIOXIDE	N_2	NITROGEN
G	GASOLINE	O_2	OXYGEN	U	UREA
K	KEROSENE	HP	HYDROGEN PEROXIDE	ES	EMULSIFIED SULFUR
C	CAUSTIC				

FUNCTIONAL LOCATION NO. _____

Last Net editor version: 1.1.2.0

INITIAL PROJECT #

THIS IS AN AutoCAD DRAWING - DO NOT MANUALLY REVISE

REVISION	DR	CHKD	APPD	DATE

PROJECT NUMBER

REFERENCE DRAWINGS

DWG. NO.	TITLE

ENGINEERING	DATE
DR	
CHKD	
APPD	
SCALE	

HARRISON POWER STATION LANDFILL
HARRISON POWER STATION
HAYWOOD, WV 26366

FACILITY HARRISON UNIT 01

MonPower — A FirstEnergy Company

DWG. NO.

REV.

830

FirstEnergy

April 21, 2020

Lake Floyd Club Inc.
c/o Ed Davis – Treasurer
PO Box 112
Salem, WV 26426

Dear WV Public Groundwater/Surface Water Systems and Emergency Management Agency:

This letter is in accordance with West Virginia code 22-30-10. The owners or operators of regulated aboveground storage tanks will provide notice directly to the appropriate public water system as well as the county and municipal emergency response organization of the type and quantity of fluid stored in each of their regulated (AST) above ground storage tanks. This notification must also include safety data sheets associated with the fluids being stored in the regulated (AST) above ground storage tanks.

We are submitting these on behalf of FirstEnergy Corp.'s operating companies including Monongahela Power, Potomac Edison and their West Virginia generation plants. If you have any questions, please contact me at 330-814-1534.

Sincerely,

Carol L. Hoffman
Senior Scientist
FirstEnergy Environmental

Enclosures

cc: G. Dinzeo
J. Ford

FirstEnergy®

April 21, 2020

Lumberport Water Department
200 Main Street
Lumberport, WV 26386

Dear WV Public Groundwater/Surface Water Systems and Emergency Management Agency:

This letter is in accordance with West Virginia code 22-30-10. The owners or operators of regulated aboveground storage tanks will provide notice directly to the appropriate public water system as well as the county and municipal emergency response organization of the type and quantity of fluid stored in each of their regulated (AST) above ground storage tanks. This notification must also include safety data sheets associated with the fluids being stored in the regulated (AST) above ground storage tanks.

We are submitting these on behalf of FirstEnergy Corp.'s operating companies including Monongahela Power, Potomac Edison and their West Virginia generation plants. If you have any questions, please contact me at 330-814-1534.

Sincerely,

Carol L. Hoffman
Senior Scientist
FirstEnergy Environmental

Enclosures

cc: G. Dinzeo
J. Ford

Owner	Facility Name
MonPower	Harrison Plant
Address	P.O. Box 60, State Route 20
City	Haywood
State	WV
Zip	26366
County	Harrison
Ground Water Supply as listed 04/21/2020 on WVDEP site	**Surface Water Supply as listed 04/21/2020 on WVDEP site**
Lake Floyd Club Inc	Town of Lumberport
Well	Intake - Jones Run Reservoir
District: DIST 6	District: DIST6
Distance: 12 miles	Distance: 46 miles
Send to:	**Send to:**
Lake Floyd Club Inc.	Lumberport Water Department
Ed Davis - Treasurer	200 Main Street
PO Box 112	Lumberport, WV 26386
Salem, WV 26426	

Chemical	Capacity (Gallons)	Chemical Abstract Service (CAS)#
Sulfuric Acid	10,000	7664-93-9
Sodium Hypochlorite	5,400	7681-52-9
Hydrogen Peroxide	9,402	7722-84-1
Sodium Hydroxide	7,087	1310-73-2
Nalmet 1689 Organosulfide	7,087	2 0.1-1%
Ferric Chloride	7,087	7705-08-0

SAFETY DATA SHEET

1. Identification

Product identifier	**Spent sulfuric acid**
Other means of identification	Not available.
Recommended use	Not available.
Recommended restrictions	None known.

Manufacturer / Importer / Supplier / Distributor information

Manufacturer/Supplier	Purolite 150 Monument Road Bala Cynwyd, PA 19004, USA
Telephone	+1 610 668 9090
Fax	+1 610 668 8139
Contact person	Ken Shaner
e-mail	msds@purolite.com
Emergency telephone number	+1 866 387 3744 +1 760 602 8703

2. Hazard(s) identification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 1A
	Serious eye damage/eye irritation	Category 1
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Causes severe skin burns and eye damage.
Precautionary statement	
Prevention	Do not breathe mist or vapor. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling.
Response	If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Not classified.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Sulfuric acid	7664-93-9	75 - 87
Water	7732-18-5	13 - 25
Hydrochloric acid	7647-01-0	< 0.5

4. First-aid measures

Inhalation
Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

Skin contact
Remove contaminated clothes and rinse skin thoroughly with water. Get medical attention immediately! Chemical burns must be treated by a physician.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Obtain medical attention and take along these instructions.

Most important symptoms/effects, acute and delayed
Corrosive. May cause burns in mucous membranes, throat, esophagus and stomach. Coughing. Sore throat. Shortness of breath. Symptoms may be delayed.

Indication of immediate medical attention and special treatment needed
In case of shortness of breath, give oxygen. Keep victim warm.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Use extinguishing agent suitable for type of surrounding fire.

Unsuitable extinguishing media
Reacts with water. Do not use water as an extinguisher.

Specific hazards arising from the chemical
By heating and fire, toxic and corrosive vapors/gases may be formed.

Special protective equipment and precautions for firefighters
Wear self-contained breathing apparatus and protective clothing.

Fire-fighting equipment/instructions
Not flammable, but reacts with most metals to form flammable hydrogen gas. Use water spray to cool unopened containers. Cool containers with flooding quantities of water until well after fire is out. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Stay upwind. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering. Keep out of low areas. Ensure adequate ventilation. Wear appropriate personal protective equipment (See Section 8).

Methods and materials for containment and cleaning up
Should not be released into the environment.

Large Spills: Stop the flow of material, if this is without risk. Dike far ahead of liquid spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

Small Spills: Absorb spillage with suitable absorbent material. After removal flush contaminated area thoroughly with water.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage

Precautions for safe handling
Use only with adequate ventilation. Avoid prolonged exposure. Wash thoroughly after handling. Handle and open container with care. Use Personal Protective Equipment recommended in section 8 of the SDS.

Conditions for safe storage, including any incompatibilities
Keep in a well-ventilated place. Keep container tightly closed. Keep this material away from food, drink and animal feed. Use care in handling/storage.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Hydrochloric acid (CAS 7647-01-0)	Ceiling	7 mg/m3
		5 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sulfuric acid (CAS 7664-93-9)	PEL	1 mg/m3

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Hydrochloric acid (CAS 7647-01-0)	Ceiling	2 ppm	
Sulfuric acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

US NIOSH Pocket Guide to Chemical Hazards: Ceiling Limit Value and Time Period (if specified)

Components	Type	Value
Hydrochloric acid (CAS 7647-01-0)	Ceiling	7 mg/m3 5 ppm

US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

Components	Type	Value
Sulfuric acid (CAS 7664-93-9)	TWA	1 mg/m3

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Provide adequate ventilation. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear chemical goggles. Wear a full-face respirator, if needed.

Skin protection

Hand protection Protective gloves should be worn to prevent skin contact. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Other Wear appropriate chemical resistant clothing to prevent any possibility of skin contact.

Respiratory protection Wear approved respiratory protection when working with this material unless ventilation is adequate to keep airborne concentrations below recommended exposure standards. Respirator type: Gas mask with acid gas canister and high-efficiency particulate filter.

Thermal hazards None known.

General hygiene considerations Do not get in eyes, on skin, on clothing. Handle in accordance with good industrial hygiene and safety practice. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance Dark liquid.

Physical state Liquid.

Form Liquid.

Color Dark.

Odor Irritating.

Odor threshold Not available.

pH Not available.

Melting point/freezing point 10 - 33 °F (-12.22 - 0.56 °C)

Initial boiling point and boiling range 518 °F (270 °C)

Flash point None

Evaporation rate Not available.

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	<0.001 mm Hg
Vapor density	Not available.
Relative density	1.84 (Approximate)
Solubility(ies)	Complete.
Partition coefficient (n-octanol/water)	No data available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	Reacts violently with water with evolution of heat.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with water. Temperatures above 300 °C
Incompatible materials	Bases. Metals. Organic material. Halogens. Strong oxidizing agents. Reducing agents.
Hazardous decomposition products	Produces toxic fumes. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Causes digestive tract burns. May cause burns in mucous membranes, throat, esophagus and stomach.
Inhalation	Causes respiratory tract burns. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.
Skin contact	Causes severe skin burns. Causes permanent skin damage (scarring).
Eye contact	Causes severe eye burns. Causes permanent eye injury. May cause blindness.
Symptoms related to the physical, chemical and toxicological characteristics	Blisters. Sore throat. Cough. Shortness of breath. Burning sensation in mouth.

Information on toxicological effects

Acute toxicity Corrosive. Causes digestive tract burns. May cause burns in mucous membranes, throat, esophagus and stomach. Causes respiratory tract burns. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

Components	Species	Test Results
Hydrochloric acid (CAS 7647-01-0)		
Acute		
Inhalation		
LC50	Rat	3124 mg/l, 1 Hours
Oral		
LD50	Rabbit	900 mg/kg
Sulfuric acid (CAS 7664-93-9)		
Acute		
Oral		
LD50	Rat	2140 mg/kg

Skin corrosion/irritation	Causes severe skin burns.
Serious eye damage/eye irritation	Causes severe eye burns.

Respiratory sensitization Not classified.

Skin sensitization Not a skin sensitizer.

Germ cell mutagenicity Not classified.

Carcinogenicity Exposure to strong inorganic acid mists containing sulfuric acid has been classified as carcinogenic to humans. The information located is insufficient to conclude that sulfuric acid itself is a carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Hydrochloric acid (CAS 7647-01-0)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity Not classified.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not classified.

Chronic effects Sulfuric acid fumes: Prolonged, repeated exposure to acid fumes/mists may cause chronic bronchitis, irritation of skin, mucous membranes and gastrointestinal tract and erosion of the teeth.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Hydrochloric acid (CAS 7647-01-0)			
Aquatic			
Fish	LC50	Western mosquitofish (Gambusia affinis)	282 mg/l, 96 hours
Sulfuric acid (CAS 7664-93-9)			
Aquatic			
Fish	LC50	Western mosquitofish (Gambusia affinis)	42 mg/l, 96 hours

Persistence and degradability No data available.

Bioaccumulative potential No data available.

Mobility in soil No data available.

Mobility in general The product is soluble in water.

Other adverse effects The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

13. Disposal considerations

Disposal instructions Neutralize and flush solution into sewer connected to wastewater treatment system in compliance with applicable laws and regulations.

Local disposal regulations Dispose of in accordance with local regulations.

Hazardous waste code D002: Waste Corrosive material [pH <=2 or =>12.5, or corrosive to steel]

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1832
UN proper shipping name	Sulfuric acid, spent
Transport hazard class(es)	8
Subsidiary class(es)	-
Packing group	II
Special precautions for user	Read safety instructions, MSDS and emergency procedures before handling.
Special provisions	A3, A7, B2, B83, B84, IB2, N34, T8, TP2, TP12
Packaging exceptions	None
Packaging non bulk	202
Packaging bulk	242

IATA

UN number	UN1832
UN proper shipping name	Sulphuric acid, spent
Transport hazard class(es)	8

Subsidiary class(es)	-
Packaging group	II
Environmental hazards	No
Labels required	8
ERG Code	8L
Special precautions for user	Read safety instructions, MSDS and emergency procedures before handling.

IMDG

UN number	UN1832
UN proper shipping name	SULPHURIC ACID, SPENT
Transport hazard class(es)	8
Subsidiary class(es)	-
Packaging group	II
Environmental hazards	
Marine pollutant	No
Labels required	8
EmS	F-A, S-B
Special precautions for user	Read safety instructions, MSDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hydrochloric acid (CAS 7647-01-0)	LISTED
Sulfuric acid (CAS 7664-93-9)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No
SARA 311/312 Hazardous chemical	Yes

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Hydrochloric acid (CAS 7647-01-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Hydrochloric acid (CAS 7647-01-0)
Sulfuric acid (CAS 7664-93-9)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Hydrochloric acid (CAS 7647-01-0)	6545
Sulfuric acid (CAS 7664-93-9)	6552

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Hydrochloric acid (CAS 7647-01-0)	20 % weight/volumn
Sulfuric acid (CAS 7664-93-9)	20 % weight/volumn

DEA Exempt Chemical Mixtures Code Number

Hydrochloric acid (CAS 7647-01-0)	6545
Sulfuric acid (CAS 7664-93-9)	6552

Food and Drug Administration (FDA) Not regulated.

US state regulations WARNING: This product contains a chemical known to the State of California to cause cancer.

US. Massachusetts RTK - Substance List

Hydrochloric acid (CAS 7647-01-0)
Sulfuric acid (CAS 7664-93-9)

US. New Jersey Worker and Community Right-to-Know Act

Hydrochloric acid (CAS 7647-01-0)	500 lbs
Sulfuric acid (CAS 7664-93-9)	500 lbs

US. Pennsylvania RTK - Hazardous Substances

Hydrochloric acid (CAS 7647-01-0)
Sulfuric acid (CAS 7664-93-9)

US. Rhode Island RTK

Hydrochloric acid (CAS 7647-01-0)
Sulfuric acid (CAS 7664-93-9)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Sulfuric acid (CAS 7664-93-9)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 04-25-2013

Revision date -

Version # 01

List of abbreviations LD50: Lethal Dose, 50%.
LC50: Lethal Concentration, 50%.

References IARC Monographs. Overall Evaluation of Carcinogenicity (Volumes 1-106)
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2009)
HSDB® - Hazardous Substances Data Bank

Disclaimer The information provided in this safety data sheet is based on current knowledge about the product and current legal requirements and standards. It relates specifically to health, safety and environmental requirements and standards, may not identify all hazards associated with the product or its uses or misuses, does not signify any warranty with regard to the properties of the product, and only applies when the product is used for the purposes indicated in section 1. This product is not sold as suitable for other purposes and such other usage may cause risks not mentioned in this safety data sheet.

Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

CONTROLLED DOCUMENT
IF STAMPED IN RED

Product Name Sulfuric Acid >51.0% - 100%
UN/ID No. UN1830
Synonyms Sulphuric acid, Oil of vitriol,
Recommended Use Reserved for industrial and professional use
Uses advised against Consumer uses: Private households (= general public = consumers).

Company Name
PVS Chemical Solutions Inc.
10900 Harper Ave.
Detroit, MI 48213
313-921-1200
24 Hour Emergency Phone Number CHEMTREC 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
May be corrosive to metals	Category 1
Carcinogenicity	Category 1A

Emergency Overview

DANGER

Hazard statements Fatal if inhaled
Causes severe skin burns and eye damage
May cause cancer

Physical hazards Do not handle until all hazard precautions have been read and understood

Precautionary statements

Prevention
- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Do not breathe dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Wear respiratory protection
- Wash face, hands and any exposed skin thoroughly after handling

Response
- Specific treatment is urgent (see 4 on this label)
- Immediately call a POISON CENTER or doctor/physician

Storage
- Store locked up
- Store in a well-ventilated place. Keep container tightly closed

Disposal
- Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC) None known.

Sulfuric Acid >51.0% - 100%

Other Information

Other hazards • May be fatal if swallowed and enters airways

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	EC No.	Weight-% *
Sulfuric acid	7664-93-9	231-639-5	>51.0%-100%
Water	7732-18-5	231-791-2	0-49

4. FIRST AID MEASURES

General advice Call 911 or emergency medical service Remove and isolate contaminated clothing and shoes

Eye contact
- Immediate medical attention is required
- Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a Poison Control Center or doctor for treatment advice.
- Do not rub affected area

Skin contact
- Wash off immediately with plenty of water for at least 15 minutes
- Remove contaminated clothing and shoes
- Seek immediate medical attention/advice

Inhalation
- Move victim to fresh air
- If breathing is irregular or stopped, administer artificial respiration
- Administer oxygen if breathing is difficult

Ingestion
- Immediate medical attention is required
- Do NOT induce vomiting
- Never give anything by mouth to an unconscious person
- Rinse mouth
- Drink 4 to 8 ounces (120-240 ml) of water as soon as possible after ingestion.
- Call a physician or poison control center immediately

Note to physician
- Keep victim warm and quiet
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed

Self-protection for first aid personnel
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves
- Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
- Dry chemical or CO2
- Cool containers with flooding quantities of water until well after fire is out
- Move containers from fire area if you can do it without risk
- Flood fire area with large quantities of water, while knocking down vapors with water fog. If insufficient water supply: knock down vapors only

Unsuitable extinguishing media
- MAY REACT VIOLENTLY WITH WATER
- Contact with water generates heat

Specific hazards arising from the chemical
- Containers may explode when heated or if contaminated with water
- Contact with metals may evolve flammable hydrogen gas
- Flammable/toxic gases may accumulate in confined areas (basements, tanks, hopper/tank cars etc.)
- May ignite combustibles (wood paper, oil, clothing, etc.)

Sulfuric Acid >51.0% - 100%

Protective equipment and precautions for firefighters

- Substance will react with water (some violently), releasing corrosive and/or toxic gases
- When material is not involved in fire: do not use water on material itself
- ALWAYS stay away from tanks engulfed in fire
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank
- Wear a self-contained breathing apparatus and chemical protective clothing

Flammable properties

- Not flammable
- Contact with metals may evolve flammable hydrogen gas

Explosive properties

- No information available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing
- Stop leak if you can do it without risk
- Full encapsulating, vapor protective clothing should be worn for spills and leaks with no fire

Environmental precautions

- For small spills, absorb material with clay absorbent or other compatible material. Dispose of the waste material according to local, state and governmental requirements.
- For large spills, contain the material using barriers of absorbent pigs, clay absorbent or earth dams.

Methods for cleaning up

- Dike far ahead of spill; use dry sand to contain the flow of material
- Take up mechanically, placing in appropriate containers for disposal
- Neutralize with soda ash or lime
- Clean contaminated surface thoroughly
- Prevent product from entering drains

Other Information

- Do not get water inside containers or in contact with substance
- Keep combustibles (wood, paper, oil, etc) away from spilled material
- Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container

7. HANDLING AND STORAGE

Advice on safe handling

- Use personal protective equipment as required
- Avoid contact with skin, eyes or clothing
- Ensure adequate ventilation, especially in confined areas
- In case of insufficient ventilation, wear suitable respiratory equipment

Storage Conditions

- Keep out of the reach of children
- Keep container tightly closed in a dry and well-ventilated place
- Keep in properly labeled containers

Incompatible materials

Reacts with many compounds, Bases, Water, Metals, Combustible material, Reducing agents, Contact with metals may evolve flammable hydrogen gas, Nitrogen containing compounds, Organics, Amines, Cyanide compounds, Styrene, Oxidizers, Incompatible with strong acids and bases, Incompatible with oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sulfuric acid 7664-93-9	TWA: 0.2 mg/m^3 thoracic particulate matter	TWA: 1 mg/m^3	IDLH: 15 mg/m^3 TWA: 1 mg/m^3

Exposure Guidelines .

Engineering Controls

Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Respiratory protection

- A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant the use of a respirator.

Sulfuric Acid >51.0% - 100%

Eye/Face protection
• Wear chemical splash goggles and face shield when eye and face contact is possible due to splashing or spraying of material

Skin and body protection
• Wear suitable protective clothing
• Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact

General Hygiene Considerations
• When using do not eat, drink or smoke
• Wash contaminated clothing before reuse
• Keep away from food, drink and animal feeding stuffs
• Contaminated work clothing should not be allowed out of the workplace
• Regular cleaning of equipment, work area and clothing is recommended
• Avoid contact with skin, eyes or clothing
• Take off all contaminated clothing and wash it before reuse
• Wear suitable gloves and eye/face protection

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	clear, oily, Liquid
Color	colorless
Odor	Odorless slightly pungent characteristic
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH	<1	
Melting point/Freezing Point	-35 to 10 °C / -31 to 50 °F	
Boiling point / boiling range	270 to 121 °C / 518 to 250 °F	(at 760 mm Hg)
Flash point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit (%)	No information available	
Lower flammability limit (%):	No information available	
Vapor pressure	<1 mm Hg	@ 40 °C
Vapor density	3.4	@ Air = 1
Specific Gravity	1.48-1.84	
Water solubility	completely soluble	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	6.8 - 23 cps @ 20°C	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point °C	No information available
Molecular weight	98.07
VOC Content (%)	No information available
Density	No information available
Bulk density	12.3 - 15.3 Pounds per gallon (lb/gal)

10. STABILITY AND REACTIVITY

Stability
• Stable under recommended storage conditions

Conditions to avoid
• Water reactive
• Exposure to air or moisture over prolonged periods

Incompatible materials
Reacts with many compounds, Bases, Water, Metals, Combustible material, Reducing

Sulfuric Acid >51.0% - 100%

agents, Contact with metals may evolve flammable hydrogen gas, Nitrogen containing compounds, Organics, Amines, Cyanide compounds, Styrene, Oxidizers, Incompatible with strong acids and bases, Incompatible with oxidizing agents

Hazardous Decomposition Products • Thermal decomposition can lead to release of irritating and toxic gases and vapors

Possibility of Hazardous Reactions • None under normal processing and storage

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principle Routes of Exposure Inhalation, Skin contact, Eye contact

Inhalation Corrosive by inhalation.

Ingestion May be fatal if swallowed.

Skin contact The product causes burns of eyes, skin and mucous membranes.

Eye contact Corrosive to the eyes and may cause severe damage including blindness.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sulfuric acid 7664-93-9	= 2140 mg/kg (Rat)		85 - 103 mg/m³ (Rat) 1 h
Water 7732-18-5	> 90 mL/kg (Rat)		

Information on toxicological effects

Symptoms No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Sulfuric acid 7664-93-9	A2	Group 1	Known	X

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.

Target Organ Effects Eyes, Respiratory system, Skin, Teeth.

Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION

Ecotoxicity

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Sulfuric acid		500: 96 h Brachydanio rerio mg/L	29: 24 h Daphnia magna mg/L

Sulfuric Acid >51.0% - 100%

7664-93-9		LC50 static	EC50

Persistence and degradability No information available.
Bioaccumulation No information available

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Disposal of wastes • This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261)
Contaminated packaging • Do not reuse container
US EPA Waste Number • D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Sulfuric acid 7664-93-9	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT

Proper shipping name	SULFURIC ACID
Hazard Class	8
UN/ID No.	UN1830
Packing Group	II
RQ (lbs)(dry)	Sulfuric acid: RQ kg= 454.00
RQ as is (lbs)(wet)	1073 (as 93% sulfuric acid)
Technical Name Description	WITH MORE THAN 51 PERCENT ACID
Description	UN1830, Sulfuric acid, 8, II, RQ
Special Provisions	A3, A7, B3, B83, B84, IB2, N34, T8, TP2
Emergency Response Guide Number	137

Transport Canada

UN/ID No.	UN1830
Proper shipping name	SULFURIC ACID
Hazard Class	8
Packing Group	II
Description	UN1830, Sulfuric acid, 8, II

IATA

UN/ID No.	UN1830
Proper shipping name	Sulphuric acid
Hazard Class	8
Packing Group	II
ERG Code	8L

IMDG

UN/ID No.	UN1830
Proper shipping name	Sulphuric acid
Hazard Class	8
Packing Group	II
EmS-No.	F-A, S-B

15. REGULATORY INFORMATION

US Federal Regulations

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	Yes

Sulfuric Acid >51.0% - 100%

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	SARA 313 - Threshold Values %
Sulfuric acid - 7664-93-9	1.0

U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs)

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sulfuric acid 7664-93-9	1000 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	RQ (lbs)(dry)
Sulfuric acid 7664-93-9	1000 lb	1000 lb	RQ 1000 lb final RQ RQ 454 kg final RQ

Canada

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Classification

D2A - Very toxic materials

WHMIS

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Sulfuric acid - 7664-93-9	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sulfuric acid 7664-93-9	X	X	X
Water 7732-18-5			X

DEA List I, List II

Chemical Name	U.S. - DEA - List I or Precursor Chemicals	U.S.- DEA - List II or Essential Chemicals
Sulfuric acid 7664-93-9	-	50 gallon, Export Volume

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Sulfuric Acid >51.0% - 100%

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

16. OTHER INFORMATION

NFPA	**Health hazards** 3	**Flammability** 0	**Instability** 2	**Physical and Chemical Properties** W
HMIS	**Health hazards** 3	**Flammability** 0	**Physical hazards** 2	**Personal protection** D

Item #	**Multi**
Safety Data Sheet	**0738**
Revision Date	Jun-28-2018
Issue Date	Jun-28-2018
Version	2
Revision Note	*** Updated value on SDS.

Disclaimer

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End of Safety Data Sheet

Safety Data Sheet
SODIUM HYPOCHLORITE 10-16%

Version 1.7 Revision Date: 03/25/2020

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : SODIUM HYPOCHLORITE 10-16%

Manufacturer or supplier's details

Company : Univar Solutions USA, Inc.

Address
3075 Highland Pkwy Suite 200
Downers Grove, IL 60515
United States of America (USA)

Emergency telephone number:
Transport North America: CHEMTREC (1-800-424-9300)
CHEMTREC INTERNATIONAL Tel # 703-527-3887

Additional Information: : Responsible Party: Product Compliance Department
E-mail: SDSNA@univarsolutions.com
SDS Requests: 1-855-429-2661
Website: www.univarsolutions.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion : Category 1A

Serious eye damage : Category 1

Corrosive to metals : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.
H290 May be corrosive to metals.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with

water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

CAS-No.	Chemical name	Weight percent
7681-52-9	Sodium hypochlorite	10 - 20
1310-73-2	Sodium hydroxide	0 - 5

Any Concentration shown as a range is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.

Keep respiratory tract clear.
Do NOT induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use an extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	:	High volume water jet
		High volume water jet
Specific hazards during fire-fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Chlorine compounds
Specific extinguishing methods	:	Use water spray to cool unopened containers.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
		Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Neutralise with acid. Soak up with inert absorbent material (e.g. sand, silica gel,

acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Do not breathe vapours/dust.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
7681-52-9	Sodium hypochlorite	STEL	2 mg/m3	US WEEL
1310-73-2	Sodium hydroxide	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.
In the case of vapour formation use a respirator with an approved filter.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing

problems.

Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	clear, yellow, green
Odour	:	Chlorine
Odour Threshold	:	No data available
pH	:	11.5 - 13 @ 25 °C (77 °F)
Freezing Point (Melting point/freezing point)	:	-20 - -15 °C (-4 - 5 °F)
Boiling Point (Boiling point/boiling range)	:	> 40 °C (> 104 °F) Decomposition
Flash point	:	Not applicable
Evaporation rate	:	< 1 (Butyl Acetate = 1)
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	12.1 mmHg @ 20 °C (68 °F)
Relative vapour density	:	No data available
Relative density	:	1.17 @ 20 °C (68 °F) Reference substance: (water = 1)
Density	:	No data available
Solubility(ies) Water solubility	:	completely soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-	:	No data available

octanol/water		
Auto-ignition temperature	:	No data available
Thermal decomposition	:	> 40 °C

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Risk of violent reaction. No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	Reacts with organic materials and may cause ignition of finely divided materials on contact. Exothermic reaction with strong acids. No decomposition if stored and applied as directed.
Conditions to avoid	:	Heat, flames and sparks. Exposure to light. Exposure to sunlight. Exposure to moisture Heat No data available
Incompatible materials	:	Organic materials Strong acids Strong oxidizing agents Ammonia Metals Amines Ethyleneimine nitrogen Reducing agents Acids Combustible material Halogenated compounds Metals metal salts Organic materials organic nitro compounds Zinc
Hazardous decomposition products	:	Chlorine hydrogen chloride Oxygen

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg

Skin corrosion/irritation

Product:

Result: Causes severe burns.

Remarks: Extremely corrosive and destructive to tissue.

Components:

7681-52-9:
Species: Rabbit
Result: Causes burns.

1310-73-2:
Species: Rabbit
Result: Causes severe burns.

Serious eye damage/eye irritation

Product:

Remarks: Risk of serious damage to eyes.

Remarks: May cause irreversible eye damage.

Components:

7681-52-9:
Species: Rabbit
Result: Risk of serious damage to eyes.

1310-73-2:
Species: Rabbit
Result: Risk of serious damage to eyes.

Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

STOT - single exposure

Components:

7681-52-9:
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

7681-52-9:

Toxicity to fish	:	LC50 (Salmo gairdneri (Rainbow Fish)): 0.06 mg/l Exposure time: 96 h Test Type: flow-through test LC50 (Pimephales promelas (fathead minnow)): 5.9 mg/l Exposure time: 96 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.141 mg/l Exposure time: 48 h Test Type: flow-through test EC50 (Ceriodaphnia dubia): 0.035 mg/l Exposure time: 48 h Test Type: flow-through test
Toxicity to algae	:	IC50: 0.023 mg/l Exposure time: 7 d Test Type: flow-through test
M-Factor (Acute aquatic toxicity)	:	10
Acute aquatic toxicity- Assessment	:	Very toxic to aquatic life.
Chronic aquatic toxicity- As-	:	Toxic to aquatic life with long lasting effects.

sessment

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential	:	Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of in accordance with all applicable local, state and federal regulations. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Univar Solutions ChemCare: 1-800-909-4897 The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

DOT (Department of Transportation):

UN1791, Hypochlorite solutions, 8, III , Marine Pollutant (SODIUM HYPOCHLORITE)

IATA (International Air Transport Association):
UN1791, Hypochlorite solution, 8, III

IMDG (International Maritime Dangerous Goods):
UN1791, HYPOCHLORITE SOLUTION, 8, III, Marine Pollutant (SODIUM HYPOCHLORITE)

SECTION 15. REGULATORY INFORMATION

WHMIS Classification : E: Corrosive Material

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium hypochlorite	7681-52-9	100	500
Sodium hydroxide	1310-73-2	1000	20000

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:
7681-52-9 Sodium hypochlorite
1310-73-2 Sodium hydroxide
The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:
7681-52-9 Sodium hypochlorite
1310-73-2 Sodium hydroxide
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

7681-52-9 Sodium hypochlorite 10 - 20 %

1310-73-2	Sodium hydroxide	5 - 10 %

Pennsylvania Right To Know

7732-18-5	Water	90 - 100 %
7681-52-9	Sodium hypochlorite	10 - 20 %
1310-73-2	Sodium hydroxide	5 - 10 %

New Jersey Right To Know

7732-18-5	Water	90 - 100 %
7681-52-9	Sodium hypochlorite	10 - 20 %
1310-73-2	Sodium hydroxide	5 - 10 %

California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

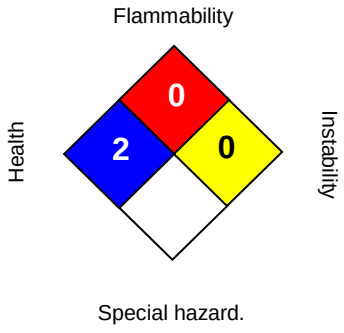
KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

SECTION16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 =Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed

to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) SDSNA@univarsolutions.com.

Revision Date : 03/25/2020

Legacy SDS: : R0004191

Material number:
16147687, 16144215, 16149245, 16150496, 16149504, 16145673, 16149243, 16136536, 16153596, 16156860, 16160599, 16160181, 16160290, 16147990, 16144046, 16145139, 16150462, 16149046, 16149516, 16148083, 16150461, 16135782, 16153735, 16135216, 16156005, 16151878, 16151769, 16151501, 16150223, 16149931, 16148522, 16148259, 16147092, 16145877, 16145876, 16141599, 16159170, 16147803, 16145874, 16142035, 16142469, 16141380, 16141858, 16141659, 16142556, 16140878, 16145134, 16145135, 16145136, 16141638, 16141449, 16141478, 16141742, 16140329, 16141509, 16141320, 16140572, 16140126, 16141988, 16140615, 16142137, 16142142, 16140640, 16142217, 16141980, 16140150, 16140525, 16141377, 16140611, 16141909, 16140514, 16142456, 16142437, 16141616, 16140660, 16140421, 16140436, 16142341, 16112157, 16099190, 746448, 653645, 16023856, 16023855, 560182, 161166, 146774, 132681, 167734, 20464, 20461, 573786, 554377, 160127, 160809, 115370, 98722, 674528, 116864, 501223

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit

IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

Univar USA Inc Material Safety Data Sheet

MSDS No:	CDS1660
Version No:	008 2014-06-19
Order No:	

Univar USA Inc., 17425 NE Union Hill Rd., Redmond WA 98052
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: HYDROGEN PEROXIDE 20-40%

SDS DATE: 06/19/2014
REPLACES: 09/26/2013

SAFETY DATA SHEET

This Safety Data Sheet conforms to ANSI Z400.5, and to the format requirements and the International Chemical Safety Cards of the Global Harmonizing System.
THIS SDS COMPLIES WITH 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD)
IMPORTANT: Read this SDS before handling & disposing of this product.
Pass this information on to employees, customers, & users of this product.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

PRODUCT IDENTITY: HYDROGEN PEROXIDE 20-40%
SDS NUMBER: CDS-1660
COMPANY IDENTITY: Univar
COMPANY ADDRESS: 17425 NE Union Hill Road
COMPANY CITY: Redmond, WA 98052
COMPANY PHONE: 1-425-889-3400
EMERGENCY PHONES: CHEMTREC: 1-800-424-9300 (USA)
CANUTEC: 1-613-996-6666 (CANADA)

SECTION 2. HAZARDS IDENTIFICATION

DANGER!!

HAZARD STATEMENTS:
H100s = General, H200s = Physical, H300s = Health, H400s = Environmental

H220	Harmful if inhaled.
H240+242	Heating may cause an explosion or fire.
H271	May cause fire or explosion; Strong Oxidizer.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.

PRECAUTIONARY STATEMENTS:
P100s = General, P200s = Prevention, P300s = Response, P400s = Storage, P500s = Disposal

P210	Keep away from heat/sparks/open flames/hot surfaces.
P220	Keep/Store away from clothing and combustible materials.
P234	Keep only in original container.
P264	Wash skin thoroughly after handling.
P270	Do no eat, drink, or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+312	IF SWALLOWED: call a POISON CENTER or doctor/physician IF you feel unwell,
P330	Rinse mouth.
P370+378	In case of fire: Use water spray for extinction.
P370+380+375	In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
P403+235	Store in a well-ventilated place. Keep cool.
P411	Store at temperatures not exceeding 40 C / 104 F.
P420	Store away from other materials.
P501	Dispose of contents/container to appropriate waste site or reclaimer in accordance with local and national regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MATERIAL	CAS#	EINECS#	WT %
Water	7732-18-5	231-791-2	60-80
Hydrogen Peroxide	7722-84-1	231-765-0	20-40

SEE SECTIONS 8, 11 & 12 FOR TOXICOLOGICAL INFORMATION.

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: HYDROGEN PEROXIDE 20-40%

SDS DATE: 06/19/2014
REPLACES: 09/26/2013

TRACE COMPONENTS: Trace ingredients (if any) are present in < 1% concentration, (< 0.1% for potential carcinogens, reproductive toxins, respiratory tract mutagens, and sensitizers). None of the trace ingredients contribute significant additional hazards at the concentrations that may be present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalents, and Canadian Hazardous Materials Identification System Standard (CPR 4).

SECTION 4. FIRST AID MEASURES

GENERAL ADVICE:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists, refer to Section 8 for specific personal protective equipment.

EYE CONTACT:
If this product enters the eyes, open eyes while under gently running water. Use sufficient force to open eyelids. "Roll" eyes to expose more surface. Minimum flushing is for 15 minutes. Seek immediate medical attention.

SKIN CONTACT:
If the product contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove contaminated clothing, taking care not to contaminate eyes. If skin becomes irritated and irritation persists, medical attention may be necessary. Wash contaminated clothing before reuse, discard contaminated shoes.

INHALATION:
After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR). Seek immediate medical attention.

SWALLOWING:
If swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, give two glasses of water to drink. DO NOT INDUCE VOMITING. Never induce vomiting or give liquids to someone who is unconscious, having convulsions, or unable to swallow. Seek immediate medical attention.

NOTES TO PHYSICIAN:
There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Any material aspirated during vomiting may cause lung injury. Therefore, emesis should not be induced mechanically or pharmacologically. If it is considered necessary to evacuate the stomach contents, this should be done by means least likely to cause aspiration (such as: Gastric lavage after endotracheal intubation).

Victims of chemical exposure must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take a copy of label and SDS to physician or health professional with victim.

SECTION 5. FIRE FIGHTING MEASURES

FIRE & EXPLOSION PREVENTIVE MEASURES
Isolate from other materials. Isolate from heat, sparks, electrical equipment and open flame.

EXTINGUISHING MEDIA
Use water spray, or water fog extinguishing media.

SPECIAL FIRE FIGHTING PROCEDURES
Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used.
Do not enter confined fire-space without full bunker gear.
(Helmet with face shield, bunker coats, gloves & rubber boots).
Use NIOSH approved positive-pressure self-contained breathing apparatus.

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: HYDROGEN PEROXIDE 20-40%

SDS DATE: 06/19/2014
REPLACES: 09/26/2013

SECTION 5. FIRE FIGHTING MEASURES (CONTINUED)

UNUSUAL EXPLOSION AND FIRE PROCEDURES

STRONG OXIDIZER!

Isolate from other materials, heat, sparks, electrical equipment & open flame.
Closed containers may explode if exposed to extreme heat.
Applying to hot surfaces requires special precautions.

SECTION 6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE AND ENVIRONMENTAL PRECAUTIONS:

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area, protect people, and respond with trained personnel.

PERSONAL PROTECTIVE EQUIPMENT

The proper personal protective equipment for incidental releases (such as: 1 Liter of the product released in a well-ventilated area), use impermeable gloves (triple-gloves (rubber gloves and nitrile gloves, over latex gloves), goggles, face shield, and appropriate body protection. In the event of a large release, use impermeable gloves, specific for the material handled, chemically resistant suit and boots, and hard hat. Self-Contained Breathing Apparatus or respirator may be required where engineering controls are not adequate or conditions for potential exposure exist. When respirators are required, select NIOSH/MSHA approved based on actual or potential airborne concentrations in accordance with latest OSHA and/or ANSI recommendations.

ENVIRONMENTAL PRECAUTIONS:

Stop spill at source. Construct temporary dikes of dirt, sand, or any appropriate readily available material to prevent spreading of the material. Close or cap valves and/or block or plug hole in leaking container and transfer to another container. Keep from entering storm sewers and ditches which lead to waterways, and if necessary, call the local fire or police department for immediate emergency assistance.

CONTAINMENT AND CLEAN-UP MEASURES:

Absorb spilled liquid with polypads or other suitable absorbent materials. If necessary, neutralize using suitable buffering material, (acid with soda ash or base with phosphoric acid), and test area with litmus paper to confirm neutralization. Clean up with non-combustible absorbent (such as: sand, soil, and so on). Shovel up and place all spill residue in suitable containers. dispose of at an appropriate waste disposal facility according to current applicable laws and regulations and product characteristics at time of disposal (see Section 13 - Disposal Considerations).

SECTION 7. HANDLING AND STORAGE

HANDLING

Use only with adequate ventilation. Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier. Wear goggles, face shield, gloves, apron & footwear impervious to material. Wash clothing before reuse.

STORAGE

Isolate from other materials, heat, sparks, electrical equipment & open flame.
Do not store above 49 C/120 F.
Keep container tightly closed & upright when not in use to prevent leakage.

NONBULK: CONTAINERS:

Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section 10, Stability and Reactivity). Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Empty containers should be handled with care. Never store food, feed, or drinking water in containers which held this product.

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: HYDROGEN PEROXIDE 20-40%

SDS DATE: 06/19/2014
REPLACES: 09/26/2013

SECTION 7. HANDLING AND STORAGE (CONTINUED)

BULK CONTAINERS:
All tanks and pipelines which contain this material must be labeled. Perform routine maintenance on tanks or pipelines which contain this product. Report all leaks immediately to the proper personnel.

TANK CAR SHIPMENTS:
Tank cars carrying this product should be loaded and unloaded in strict accordance with tank-car manufacturer's recommendation and all established on-site safety procedures. Appropriate personal protective equipment must be used (see Section 8, Engineering Controls and Personal Protective Equipment.). All loading and unloading equipment must be inspected, prior to each use. Loading and unloading operations must be attended, at all times. Tank cars must be level, brakes must be set or wheels must be locked or blocked prior to loading or unloading. Tank car (for loading) or storage tanks (for unloading) must be verified to be correct for receiving this product and be properly prepared, prior to starting the transfer operations. Hoses must be verified to be in the correct positions, before starting transfer operations. A sample (if required) must be taken and verified (if required) prior to starting transfer operations. All lines must be blown-down and purged before disconnecting them from the tank car or vessel.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:
Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Collect all rinsates and dispose of according to applicable Federal, State, Provincial, or local procedures.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

MATERIAL	CAS#	EINECS#	TWA (OSHA)	TLV (ACGIH)
Water	7732-18-5	231-791-2	None Known	None Known
Hydrogen Peroxide	7722-84-1	231-765-0	1 ppm	1 ppm

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.

RESPIRATORY EXPOSURE CONTROLS
Maintain airborne contaminant concentrations below exposure limits given above. If respiratory protection is needed, use only protection authorized in 29 CFR 1910.134, European Standard EN 149, or applicable State regulations. If adequate ventilation is not available or there is potential for airborne exposure above the exposure limits, a respirator may be worn up to the respirator exposure limitations, check with respirator equipment manufacturer's recommendations/limitations. For a higher level of protection, use positive pressure supplied air respiration protection or Self-Contained Breathing Apparatus or if oxygen levels are below 19.5% or are unknown.

EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS
Positive pressure, full-face piece Self-Contained Breathing Apparatus; or positive pressure, full-face piece Self-Contained Breathing Apparatus with an auxilliary positive pressure Self-Contained Breathing Apparatus.

VENTILATION
LOCAL EXHAUST: Necessary
MECHANICAL (GENERAL): Necessary
SPECIAL: None
OTHER: None
Please refer to ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

EYE PROTECTION:
Splash goggles or safety glasses. Face-shields are recommended when the operation can generate splashes, sprays or mists.

HAND PROTECTION:
Wear appropriate impervious gloves for routine industrial use. Use impervious gloves for spill response, as stated in Section 6 of this SDS (Accidental Release Measures).

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: HYDROGEN PEROXIDE 20-40%

SDS DATE: 09/26/2013
REPLACES: 09/08/2010

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION (CONTINUED)

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

BODY PROTECTION:
Use body protection appropriate for task. Cover-all, rubber aprons, or chemical protective clothing made from impervious materials are generally acceptable, depending on the task.

WORK & HYGIENIC PRACTICES:
Provide readily accessible eye wash stations & safety showers. Wash at end of each shift & before eating, smoking or using the toilet. Remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

SECTION 9. PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE:	Liquid, Water-White
ODOR:	None
ODOR THRESHOLD:	Not Available
pH (Neutrality):	< 3.7
MELTING POINT/FREEZING POINT:	-15 to -33 C / +6 to -27 F
BOILING RANGE (IBP,50%,Dry Point):	100 108 176 C / 212 227 350 F
FLASH POINT (TEST METHOD):	Not Applicable
EVAPORATION RATE (n-BUTYL ACETATE=1):	0.094
FLAMMABILITY CLASSIFICATION:	Non-Combustible
LOWER FLAMMABLE LIMIT IN AIR (% by vol):	Not Applicable
UPPER FLAMMABLE LIMIT IN AIR (% by vol):	Not Applicable
VAPOR PRESSURE (mm of Hg)@20 C	23 - 28
VAPOR DENSITY (air=1):	0.772
GRAVITY @ 68/68 F / 20/20 C:	
SPECIFIC GRAVITY (Water=1):	1.33
POUNDS/GALLON:	9.45
WATER SOLUBILITY:	Complete
PARTITION COEFFICIENT (n-Octane/Water):	Not Available
AUTO IGNITION TEMPERATURE:	Not Applicable
DECOMPOSITION TEMPERATURE:	Not Available
VOCs (>0.044 Lbs/Sq In) :	0.0 Vol% /0.0 g/L / 0.000 Lbs/Gal
TOTAL VOC'S (TVOC)*:	0.0 Vol% /0.0 g/L / 0.000 Lbs/Gal
NONEXEMPT VOC'S (CVOC)*:	0.0 Vol% /0.0 g/L / 0.000 Lbs/Gal
HAZARDOUS AIR POLLUTANTS (HAPS):	0.0 Wt% /0.0 g/L / 0.000 Lbs/Gal
NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C)	0.0

* Using CARB (California Air Resources Board Rules).

SECTION 10. STABILITY & REACTIVITY

STABILITY
Stable under normal conditions.

CONDITIONS TO AVOID
Excessive heat or contamination could cause the product to become unstable.

MATERIALS TO AVOID
Dirt, Cyanides, Reducing agents, wood, paper, other organics and combustibles, iron and other heavy metals, copper alloys and caustics.

HAZARDOUS DECOMPOSITION PRODUCTS
Oxygen (which supports combustion).

HAZARDOUS POLYMERIZATION
Will not occur.

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: HYDROGEN PEROXIDE 20-40%

SDS DATE: 06/19/2014
REPLACES: 09/26/2013

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE HAZARDS

EYE & SKIN CONTACT:
Primary irritation to skin, defatting, dermatitis.
Liquid is extremely irritating/corrosive to eyes, and may cause irreversible damage including blindness.
Wash thoroughly after handling.

INHALATION:
Anesthetic. Irritates respiratory tract. Acute overexposure can cause serious nervous system depression. Vapor harmful.

SWALLOWING:
Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea.

SUBCHRONIC HAZARDS/CONDITIONS AGGRAVATED

CONDITIONS AGGRAVATED
Persons with severe skin, liver or kidney problems should avoid use.

CHRONIC HAZARDS

CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:
This product has no carcinogens listed by IARC, NTP, NIOSH, OSHA or ACGIH, as of this date, greater or equal to 0.1%.

SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

IRRITANCY OF PRODUCT: This product is irritating to contaminated tissue.

SENSITIZATION TO THE PRODUCT: No component of this product is known to be a sensitizer.

MUTAGENICITY: This product is not reported to produce mutagenic effects in humans.

EMBRYOTOXICITY: This product is not reported to produce embryotoxic effects in humans.

TERATOGENICITY: This product is not reported to produce teratogenic effects in humans.

REPRODUCTIVE TOXICITY: This product is not reported to cause reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical which causes damage to a developing embryo (such as: within the eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

MAMMALIAN TOXICITY INFORMATION

LD50 (Oral):	1193 mg/kg (Rats)
LC50 (Inhalation):	> 0.17 mg/L (Rats)
LD50 (Skin):	> 2000 mg/kg (Rabbits)

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: HYDROGEN PEROXIDE 20-40%

SDS DATE: 06/19/2014
REPLACES: 09/26/2013

SECTION 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

EFFECT OF MATERIAL ON PLANTS AND ANIMALS:
This product may be harmful or fatal to plant and animal life if released into the environment. Refer to Section 11 (Toxicological Information) for further data on the effects of this product's components on test animals.

EFFECT OF MATERIAL ON AQUATIC LIFE:
No aquatic environmental information is available on this product.

MOBILITY IN SOIL
This material is a mobile liquid.

DEGRADABILITY
This product is completely biodegradable.

ACCUMULATION
This product does not accumulate or biomagnify in the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Processing, use or contamination may change the waste disposal requirements. Do not dispose of on land, in surface waters, or in storm drains. Waste should be recycled or disposed of in accordance with regulations. Large amounts should be collected for reuse or consigned to licensed hazardous waste haulers for disposal.
ALL DISPOSAL MUST BE IN ACCORDANCE WITH ALL FEDERAL, STATE, PROVINCIAL, AND LOCAL REGULATIONS. IF IN DOUBT, CONTACT PROPER AGENCIES. EPA CHARACTERISTIC: D001, D002

SECTION 14. TRANSPORT INFORMATION

DOT/TDG SHIP NAME: UN2014, Hydrogen peroxide, aqueous solutions, 5.1, (8), PG-II
DRUM LABEL: Oxidizer, Corrosive
IATA / ICAO: UN2014, Hydrogen peroxide, aqueous solutions, 5.1, (8), PG-II
IMO / IMDG: UN2014, Hydrogen peroxide, aqueous solutions, 5.1, (8), PG-II
EMERGENCY RESPONSE GUIDEBOOK NUMBER: 140

SECTION 15. REGULATORY INFORMATION

EPA REGULATION:
SARA SECTION 311/312 HAZARDS: Acute Health, Fire

All components of this product are on the TSCA list.
This material contains no known products restricted under SARA Title III, Section 313 in amounts greater or equal to 1%.

COMPANY IDENTITY: Univar
PRODUCT IDENTITY: HYDROGEN PEROXIDE 20-40%

SDS DATE: 06/19/2014
REPLACES: 09/26/2013

SECTION 15. REGULATORY INFORMATION (CONTINUED)

STATE REGULATIONS:
CALIFORNIA SAFE DRINKING WATER & TOXIC ENFORCEMENT ACT (PROPOSITION 65):
This product contains no chemicals known to the State of California to cause cancer or reproductive toxicity.

INTERNATIONAL REGULATIONS
The components of this product are listed on the chemical inventories of the following countries:
Australia (AICS), Canada (DSL or NDSL), China (IECSC), Europe (EINECS, ELINCS)G
Japan (METI/CSCL, MHLW/ISHL), South Korea (KECI), New Zealand (NZIoC),
Philippines (PICCS), Switzerland (SWISS), Taiwan (NECSI), USA (TSCA).

CANADA: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)
C: Oxidizing Material.
D2B: Irritating to skin / eyes.
E: Corrosive Material.

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

SECTION 16. OTHER INFORMATION

HAZARD RATINGS:
HEALTH (NFPA): 3, HEALTH (HMIS): 3, FLAMMABILITY: 0, PHYSICAL HAZARD: 1
(Personal Protection Rating to be supplied by user based on use conditions.)
This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

EMPLOYEE TRAINING
See Section 2 for Risk & Safety Statements. Employees should be made aware of all hazards of this material (as stated in this SDS) before handling it.

Univar USA Inc Material Safety Data Sheet

For Additional Information contact MSDS Coordinator during business hours, Pacific time: (425) 889-3400

Notice

Univar USA Inc. (”Univar”) expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Univar sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process

Safety Data Sheet
Caustic Soda 20% Liquid

Version 1.3 Revision Date: 09/18/2019

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Caustic Soda 20% Liquid

Recommended use of the chemical and restrictions on use

Recommended use : Industrial chemical

Manufacturer or supplier's details

Company : Univar Solutions USA, Inc.
Address 3075 Highland Pkwy Suite 200
Downers Grove, IL 60515
United States of America (USA)

Emergency telephone number:
Transport North America: CHEMTREC (1-800-424-9300)
CHEMTREC INTERNATIONAL Tel # 703-527-3887

Additional Information: : Responsible Party: Product Compliance Department
E-mail: SDSNA@univarsolutions.com
SDS Requests: 1-855-429-2661
Website: www.univarsolutions.com

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to metals : Category 1

Skin corrosion : Category 1A

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P234 Keep only in original container.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Imme-

diately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
Storage:
P405 Store locked up.
P406 Store in corrosive resistant stainless steel container with a resistant inner liner.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

CAS-No.	Chemical name	Weight percent
1310-73-2	Sodium hydroxide	20 - 30

Any Concentration shown as a range is due to batch variation.

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Take victim immediately to hospital.

If swallowed : Keep respiratory tract clear.
Do not induce vomiting without medical advice.

Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Carbon dioxide (CO_2) Dry chemical Water spray
Unsuitable extinguishing media	:	Halons
Specific hazards during fire-fighting	:	Do not allow run-off from fire fighting to enter drains or water courses. Substance is an oxidizer that will cause moderate increase in the burning rate of combustible materials with which it comes into contact.
Hazardous combustion products	:	No hazardous combustion products are known
Specific extinguishing methods	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Neutralise with acid. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not breathe vapours/dust. Avoid contact with skin and eyes.

For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1310-73-2	Sodium hydroxide	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		TWA	2 mg/m3	OSHA Z-1
		C	2 mg/m3	OSHA P0

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid
Colour : colorless
Odour : odorless
Odour Threshold : No data available
pH : 14 @ 20 - 25 °C (68 - 77 °F)

Freezing Point : No data available

Boiling Point (Boiling point/boiling range)	:	100 °C (212 °F) (1013 hPa)
Flash point	:	Not applicable
Evaporation rate	:	> 1 Ethyl Ether
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	> 17.0 mmHg @ 20 °C (68 °F)
Relative vapour density	:	< 1(Air = 1.0)
Relative density	:	1.223 @ 20 °C (68 °F)
Density	:	1.223 g/cm3 @ 20 °C (68 °F)
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Thermal decomposition	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Can react with chemically reactive metals, such as aluminum, zinc, magnesium, copper, etc., to release hydrogen gas which can form explosive mixtures with air. Caustic may react with various reducing sugars (i.e. fructose, galactose, maltose, dry whey solids) to generate carbon monoxide. Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed vessels and can cause death. Precautions should be taken including monitoring the tank atmosphere for carbon monoxide to ensure safety of personnel.
Conditions to avoid	:	Keep away from heat, flame, sparks and other ignition sources. Exposure to sunlight. Exposure to moisture
Incompatible materials	:	Organic materials Strong acids Strong oxidizing agents aluminum brass bronze Copper alloys

glycols
halogenated hydrocarbons
Lead
magnesium
nitroparaffins
organic nitro compounds
Reducing agents
Tin
water
Zinc
Metals

Hazardous decomposition products : None known.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg

Skin corrosion/irritation

Product:

Result: Causes severe burns.

Components:

1310-73-2:
Species: Rabbit
Result: Causes severe burns.

Serious eye damage/eye irritation

Product:

Result: Risk of serious damage to eyes.

Components:

1310-73-2:
Species: Rabbit
Result: Risk of serious damage to eyes.

Carcinogenicity

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Aspiration toxicity

Product:

No aspiration toxicity classification

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Univar Solutions ChemCare: 1-800-909-4897

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

DOT (Department of Transportation):
UN1824, Sodium hydroxide solution, 8, II

IATA (International Air Transport Association):
UN1824, Sodium hydroxide solution, 8, II

IMDG (International Maritime Dangerous Goods):
UN1824, SODIUM HYDROXIDE SOLUTION, 8, II

SECTION 15. REGULATORY INFORMATION

WHMIS Classification : E: Corrosive Material

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium hydroxide	1310-73-2	1000	4854

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:
1310-73-2 Sodium hydroxide
The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:
1310-73-2 Sodium hydroxide
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

1310-73-2	Sodium hydroxide	20 - 30 %

Pennsylvania Right To Know

7732-18-5	Water	50 - 70 %
1310-73-2	Sodium hydroxide	20 - 30 %

New Jersey Right To Know

7732-18-5	Water	50 - 70 %
1310-73-2	Sodium hydroxide	20 - 30 %

California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

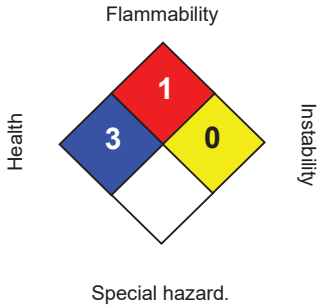
KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

SECTION16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 =Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) SDSNA@univarsolutions.com.

Revision Date : 09/18/2019

Legacy SDS: : R0015852

Material number:
16133683, 542058, 69095, 86948, 70679, 87290, 21980

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit

EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

NALCO Water
An Ecolab Company

SAFETY DATA SHEET

NALMET® 1689

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	NALMET® 1689
Other means of identification	:	Not applicable.
Recommended use	:	WATER CLARIFICATION AID
Restrictions on use	:	Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
Company	:	Nalco Company 1601 W. Diehl Road Naperville, Illinois 60563-1198 USA TEL: (630)305-1000
Emergency telephone number	:	(800) 424-9300 (24 Hours) CHEMTREC
Issuing date	:	05/22/2018

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Eye irritation	:	Category 2B

GHS Label element

Signal Word	:	Warning
Hazard Statements	:	Causes eye irritation.
Precautionary Statements	:	**Prevention:** Wash skin thoroughly after handling. **Response:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.
Other hazards	:	None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture	:	Mixture

Chemical Name	CAS-No.	Concentration: (%)
Sodium Chloride	7647-14-5	1 - 5
Sodium Sulphide	1313-82-2	1 - 5
Sodium Hydroxide	1310-73-2	0.1 - 1

Section: 4. FIRST AID MEASURES

In case of eye contact	:	Rinse with plenty of water. Get medical attention if symptoms occur.

In case of skin contact	:	Wash off with soap and plenty of water. Get medical attention if symptoms occur.
If swallowed	:	Rinse mouth. Get medical attention if symptoms occur.
If inhaled	:	Get medical attention if symptoms occur.
Protection of first-aiders	:	In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	:	Treat symptomatically.
Most important symptoms and effects, both acute and delayed	:	See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	None known.
Specific hazards during firefighting	:	Not flammable or combustible.
Hazardous combustion products	:	Decomposition products may include the following materials: Carbon oxides Sulphur oxides Hydrogen chloride metal oxides
Special protective equipment for firefighters	:	Use personal protective equipment.
Specific extinguishing methods	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Do not allow contact with soil, surface or ground water.
Methods and materials for containment and cleaning up	:	Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

Advice on safe handling	:	Wash hands thoroughly after handling. Use only with adequate ventilation.
Conditions for safe storage	:	Do not store near acids. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.
Suitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
Unsuitable material	:	Brass, coated steelnot determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	:	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection	:	Safety glasses
Hand protection	:	Wear protective gloves. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin protection	:	Wear suitable protective clothing.
Respiratory protection	:	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	brown
Odour	:	Sulfurous
Flash point	:	, Method: ASTM D 93, Pensky-Martens closed cup, does not flash
pH	:	13.1,(100 %)
Odour Threshold	:	no data available
Melting point/freezing point	:	no data available
Initial boiling point and boiling range	:	no data available

Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Relative density	:	1.10 - 1.35, (25 °C),
Density	:	9.2 - 11.2 lb/gal
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Molecular weight	:	no data available
VOC	:	0 %, 0 g/l, EPA Method 24

Section: 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	None known.
Incompatible materials	:	May release SO2 or hydrogen sulfide on contact with acids.
Hazardous decomposition products	:	Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides metal oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes eye irritation.

Skin	:	Health injuries are not known or expected under normal use.
Ingestion	:	Health injuries are not known or expected under normal use.
Inhalation	:	Health injuries are not known or expected under normal use.
Chronic Exposure	:	Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	:	Redness, Irritation
Skin contact	:	No symptoms known or expected.
Ingestion	:	No symptoms known or expected.
Inhalation	:	No symptoms known or expected.

Toxicity

Product

Acute oral toxicity	:	Acute toxicity estimate: > 5,000 mg/kg
Acute inhalation toxicity	:	no data available
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg
Skin corrosion/irritation	:	Result: No skin irritation Test substance: Similar Product
Serious eye damage/eye irritation	:	Result: Irritation to eyes, reversing within 7 days Test substance: Similar Product
Respiratory or skin sensitization	:	no data available
Carcinogenicity	:	no data available
Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects	:	This product has no known ecotoxicological effects.

Product

Toxicity to fish	:	LC50 Oncorhynchus mykiss (rainbow trout): 74 mg/l Exposure time: 96 hrs Test substance: Product

LC50 Cyprinodon variegatus (sheepshead minnow): > 1,000 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Oncorhynchus mykiss (rainbow trout): < 40 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Cyprinodon variegatus (sheepshead minnow): 400 mg/l
Exposure time: 96 hrs
Test substance: Product

NOEC Pimephales promelas (fathead minnow): 432 mg/l
Exposure time: 96 h
Test substance: Product

LC50 Pimephales promelas (fathead minnow): 602 mg/l
Exposure time: 96 h
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates : LC50 Daphnia magna (Water flea): 73 mg/l
Exposure time: 48 hrs
Test substance: Product

EC50 Daphnia magna (Water flea): 18 mg/l
Exposure time: 48 hrs
Test substance: Product

NOEC Daphnia magna (Water flea): 5 mg/l
Exposure time: 48 hrs
Test substance: Product

Toxicity to fish (Chronic toxicity) : ChV: 85.6 mg/l
Exposure time: 7 d
Species: Fathead Minnow
Test substance: Product

LOEC: 121 mg/l
Exposure time: 7 d
Species: Fathead Minnow
Test substance: Product

NOEC: 60.5 mg/l
Exposure time: 7 d
Species: Fathead Minnow
Test substance: Product

EC25 / IC25: 27.2 mg/l
Exposure time: 7 d
Species: Fathead Minnow
Test substance: Product

Chronic Toxicity Value: 10.7 mg/l
Exposure time: 7 d
Species: Fathead Minnow
Test substance: Product

LOEC: 15.1 mg/l
Exposure time: 7 d
Species: Fathead Minnow
Test substance: Product

NOEC: 7.56 mg/l
Exposure time: 7 d
Species: Fathead Minnow
Test substance: Product

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Chronic Toxicity Value: > 4.84 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

LOEC: > 4.84 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

NOEC: 4.84 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

EC25 / IC25: 2.75 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

Chronic Toxicity Value: 3.42 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

LOEC: 4.84 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

NOEC: 2.42 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

Persistence and degradability

The organic portion of this preparation is expected to be poorly biodegradable.

Chemical Oxygen Demand (COD): 420,000 mg/l

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.
If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	30 - 50%
Soil	:	> 90%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated at the time of disposal to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods	:	The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name	:	CAUSTIC ALKALI LIQUID, N.O.S.
Technical name(s)	:	Sodium Sulphide, Sodium Hydroxide
UN/ID No.	:	UN 1719
Transport hazard class(es)	:	8
Packing group	:	III
Reportable Quantity (per	:	200,000 lbs

package)
RQ Component : SODIUM HYDROXIDE

Air transport (IATA)

Proper shipping name	:	CAUSTIC ALKALI LIQUID, N.O.S.
Technical name(s)	:	Sodium Sulphide, Sodium Hydroxide
UN/ID No.	:	UN 1719
Transport hazard class(es)	:	8
Packing group	:	III
Reportable Quantity (per package)	:	200,000 lbs
RQ Component	:	SODIUM HYDROXIDE

Sea transport (IMDG/IMO)

Proper shipping name	:	CAUSTIC ALKALI LIQUID, N.O.S.
Technical name(s)	:	Sodium Sulphide, Sodium Hydroxide
UN/ID No.	:	UN 1719
Transport hazard class(es)	:	8
Packing group	:	III

Section: 15. REGULATORY INFORMATION

TSCA list : Not relevant

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sodium Hydroxide	1310-73-2	1000	200000

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

United States TSCA Inventory

The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

Australia. Industrial Chemical (Notification and Assessment) Act
All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

Canadian Domestic Substances List (DSL)
This product contains substance(s) which are not listed on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL).

Japan. ENCS - Existing and New Chemical Substances Inventory
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

Korea. Korean Existing Chemicals Inventory (KECI)
All substances in this product comply with the Chemical Control Act (CCA) and are listed on the Existing Chemicals List (ECL)

Philippines Inventory of Chemicals and Chemical Substances (PICCS)
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

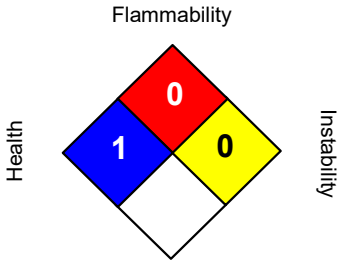
China Inventory of Existing Chemical Substances
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996,and are listed on or are exempt from the New Zealand Inventory of Chemicals.

Taiwan Chemical Substance Inventory
All substances in this product comply with the Taiwan Existing Chemical Substances Inventory (ECSI).

Section: 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date	:	05/22/2018
Version Number	:	1.10
Prepared By	:	Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
For additional copies of an SDS visit www.nalco.com and request access.

SAFETY DATA SHEET

CAT-FLOC 71264

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	CAT-FLOC 71264
Other means of identification	:	Not applicable.
Recommended use	:	COAGULANT AID
Restrictions on use	:	Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
Company	:	Nalco Company 1601 W. Diehl Road Naperville, Illinois 60563-1198 USA TEL: (630)305-1000
Emergency telephone number	:	(800) 424-9300 (24 Hours) CHEMTREC
Issuing date	:	05/07/2014

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Skin corrosion	:	Category 1A
Serious eye damage/eye irritation	:	Category 1

GHS Label element

Hazard pictograms :

Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.

Precautionary Statements :

Prevention:
Wash skin thoroughly after handling. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician. Wash contaminated clothing before reuse.
Storage:
Store locked up.
Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Concentration: (%)
Ferric Chloride	7705-08-0	30 - 60
Dimethylamine - Epichlorohydrin Copolymer	25988-97-0	1 - 5

Section: 4. FIRST AID MEASURES

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

If inhaled : Remove to fresh air. Treat symptomatically. Get medical attention if symptoms occur.

Protection of first-aiders : In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders.Use personal protective equipment as required.

Notes to physician : Treat symptomatically.

See toxicological information (Section 11)

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : None known.

Specific hazards during firefighting : Not flammable or combustible.

Hazardous combustion products : Carbon oxides

Special protective equipment for firefighters : Use personal protective equipment.

Specific extinguishing methods : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid inhalation, ingestion and contact with skin and eyes. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow contact with soil, surface or ground water.

Methods and materials for containment and cleaning up : Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

Section: 7. HANDLING AND STORAGE

Advice on safe handling : Do not ingest. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage : Keep away from strong bases. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

Packaging material : Suitable material: Keep in properly labelled containers.

Unsuitable material: not determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Ferric Chloride	7705-08-0	TWA	1 mg/m3	ACGIH
		TWA	1 mg/m3	NIOSH REL

Engineering measures : Effective exhaust ventilation system. Maintain air concentrations below occupational exposure standards.

Personal protective equipment

Eye protection : Safety goggles
Face-shield

Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

Respiratory protection	:	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Hygiene measures	:	Remove and wash contaminated clothing before re-use. Wash hands before breaks and immediately after handling the product. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	Dark brown Opaque
Odour	:	Slight
Flash point	:	Not applicable.
pH	:	1.2, 100 %
Odour Threshold	:	no data available
Melting point/freezing point	:	no data available
Initial boiling point and boiling range	:	106 °C
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	40 mm Hg (35 °C)
Relative vapour density	:	no data available
Relative density	:	1.37 - 1.41 (25 °C)
Density	:	no data available
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	Carbon oxides
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
VOC	:	no data available

Section: 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Freezing temperatures.

Incompatible materials	:	Contact with strong alkalies (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors.
Hazardous decomposition products	:	Oxides of carbon Oxides of nitrogen HCl May evolve ammonia under fire conditions. Carbon oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye damage.
Skin	:	Causes severe skin burns.
Ingestion	:	Causes digestive tract burns.
Inhalation	:	May cause nose, throat, and lung irritation.
Chronic Exposure	:	Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	:	Redness, Pain, Corrosion
Skin contact	:	Redness, Pain, Corrosion
Ingestion	:	Corrosion, Abdominal pain
Inhalation	:	Respiratory irritation, Cough

Toxicity

Product

Acute oral toxicity	:	Acute toxicity estimate : 3,818 mg/kg
Acute inhalation toxicity	:	Acute toxicity estimate : > 30000 ppm Exposure time: 4 h
Acute dermal toxicity	:	no data available
Skin corrosion/irritation	:	no data available
Serious eye damage/eye irritation	:	no data available
Respiratory or skin sensitization	:	no data available

Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects	:	This product has no known ecotoxicological effects.

Product

Toxicity to fish	:	LC50 Zebra Danio: 10 - 100 mg/l Exposure time: 96 hrs Test substance: Representative polymer tested in water with DOC
Toxicity to daphnia and other aquatic invertebrates	:	LC50 Daphnia magna: 10 - 100 mg/l Exposure time: 48 hrs Test substance: Representative polymer tested in water with DOC
Toxicity to algae	:	no data available

Persistence and degradability

no data available

Mobility

The product is eliminated from aqueous phase via abiotic process (adsorption on suspended material) to a large extent (>95 %).

Air	:
Water	:
Soil	:

Bioaccumulative potential

No bioaccumulation will occur. The large size of the polymer is incompatible with transport across the cellular membranes.

Other information

The hazard characterization is based on the tests or potential hazard in the clean water.

Section: 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste:	:	D002
Disposal methods	:	Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

Section: 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name	:	FERRIC CHLORIDE, SOLUTION
Technical name(s)	:	
UN/ID No.	:	UN 2582
Transport hazard class(es)	:	8
Packing group	:	III
Reportable Quantity (per package)	:	3,030 lbs
RQ Component	:	FERRIC CHLORIDE

Air transport (IATA)

Proper shipping name	:	FERRIC CHLORIDE, SOLUTION
Technical name(s)	:	
UN/ID No.	:	UN 2582
Transport hazard class(es)	:	8
Packing group	:	III
Reportable Quantity (per package)	:	3,030 lbs
RQ Component	:	FERRIC CHLORIDE

Sea Transport (IMDG/IMO)

Proper shipping name	:	FERRIC CHLORIDE, SOLUTION
Technical name(s)	:	
UN/ID No.	:	UN 2582
Transport hazard class(es)	:	8
Packing group	:	III

Section: 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ferric Chloride	7705-08-0	1000	3056

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Hydrochloric Acid	7647-01-0	5000	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute Health Hazard

SARA 302 : The following components are subject to reporting levels established by SARA Title III, Section 302:
Hydrochloric Acid 7647-01-0 0.9091 %

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)
The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA
All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

JAPAN
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

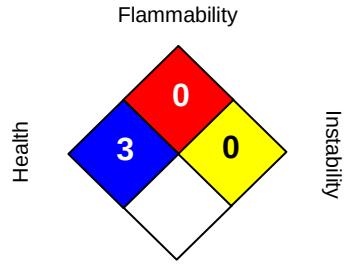
KOREA
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

NEW ZEALAND
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996,and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

Section: 16. OTHER INFORMATION

NFPA:



Special hazard.

HMIS III:

HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Revision Date	:	05/07/2014
Version Number	:	1.0
Prepared By	:	Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

For additional copies of an MSDS visit www.nalco.com and request access.

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

James Austin Company
115 Downieville Road
PO Box 827
Mars, PA 16046

Phone: 724-625-1535
Fax: 724-625-3288
Web: www.jamesaustin.com

Product Name: Austin's A-1 Bleach
Revision Date: 5/28/2015
Version: 1
SDS Number: 106
Common Name: Sodium Hypochlorite
CAS Number: 7681-52-9
Product Code: 54200-00015, 54200-00025, 54200-00035, 54200-00125
RCRA Number: D002 (For pH greater than 12.50)
Chemical Formula: NaOCl
Synonyms: Bleach, Liquid Bleach, Soda Bleach
Internal ID: 90000165, 90000390, 91000362, 90000125

2 HAZARDS IDENTIFICATION

GHS Signal Word:
WARNING

GHS Hazard Pictograms:

GHS Classifications:
Health, Skin corrosion/irritation, 3
Health, Specific target organ toxicity - Single exposure, 3
Environmental, Hazards to the aquatic environment - Acute, 1
Environmental, Hazards to the aquatic environment - Chronic, 4
Health, Serious Eye Damage/Eye Irritation, 2 B

GHS Phrases:
H316 - Causes mild skin irritation
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H413 - May cause long lasting harmful effects to aquatic life
H320 - Causes eye irritation

GHS Precautionary Statements:
P220 - Keep/Store away from clothing/combustible materials.

P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P264 - Wash exposed skin thoroughly after handling.
P262 - Do not get in eyes, on skin, or on clothing.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P273 - Avoid release to the environment.
P301+330+331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P303+361+353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338 - IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P309+311 - IF exposed or you feel unwell: Call a POISON CENTER or doctor/physician.
P401 - Store upright in a cool, dry place.
P501 - Dispose of contents/container to an approved waste disposal plant.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas #	Percentage	Chemical Name
7681-52-9	5.25-5.40%	Sodium hypochlorite
7732-18-5	94.60-94.75%	Water

4 FIRST AID MEASURES

Inhalation: In the event of exposure to excessive vapor levels, move the individual to fresh air and seek medical attention if symptoms develop or persist.

Skin Contact: Immediately rinse with plenty of water while removing any contaminated clothing. If irritation develops or persists, seek medical attention. Wash contaminated clothing before resuse.

Eye Contact: Rinse immediately with plenty of water. Keep eye(s) wide open while rinsing. Avoid rubbing the affected area. Seek medical attention if needed.

Ingestion: Do NOT induce vomiting. Rinse mouth thoroughly with water. Drink plenty of water. Call a physician or poison control center.

NOTE TO PHYSICIAN:
Probable mucosal damage may contraindicate the use of gastric lavage.

5 FIRE FIGHTING MEASURES

Flammability:	Not flammable
Flash Point:	No information available
Flash Point Method:	No information available
Burning Rate:	No information available
Autoignition Temp:	No information available
LEL:	No information available
UEL:	No information available

Highly exothermic reactions with organic materials and oxidizable materials may cause fires.

In the event of a fire, wear full protective clothing and MSHA/NIOSH self-contained breathing apparatus with a full facepiece operated in the pressure-demand or other positive pressure mode.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment; Water spray may be used to keep fire exposed containers cool.

6 ACCIDENTAL RELEASE MEASURES

Use personal protective equipment as required/recommended. Evacuate public to a safe area. Avoid contact with skin, eyes, and clothing.

Prevent spills from entering sewers or waterways. Contain run-off using diking composed of a suitable material. Soak up liquid on inert absorbant and transfer to an approved container. Clean contaminated surface thoroughly.

7 HANDLING AND STORAGE

Handling Precautions:	Use personal protective equipment as required/recommended. Use only with adequate ventilation. Avoid contact with skin, eyes, and clothing. Use suitable respiratory equipment in case of inadequate ventilation.
Storage Requirements:	Store using properly labeled containers in a cool, dry, well ventilated area. Keep out of reach of children. Separate from incompatible materials.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:	Use adequate ventilation, especially in confined spaces
Personal Protective Equip:	Chemical splash goggles; Face shield; Neoprene gloves; NIOSH approved respirator; Apron.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear yellow		
Physical State:	Liquid	**Odor:**	Pungent; Chlorine
Spec Grav./Density:	1.070 - 1.080	**Solubility:**	Completely miscible in water
pH:	12-13		

10 STABILITY AND REACTIVITY

Stability:	The product is stable and non-reactive under normal conditions of use, storage and transport.
Conditions to Avoid:	Contact with incompatible materials. Excessive heat and exposure to light. Reacts violently with strong acids producing chlorine gas. Contact with amines will result in chloramines.
Materials to Avoid:	Strong oxidizing agents, acids, metals, organic compounds, ammonia. Oxidizable or combustible materials.
Hazardous Decomposition:	None under normal processing.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

Toxicity Data:

Eye Effects: Causes eye burns.
Skin Effects: Causes skin burns.
Acute Inhalation Effects: Vapors and mist may irritate throat and respiratory system; may cause coughing.
Chronic Effects: Prolonged or repeated overexposure may cause lung damage.
Carcinogenicity: Not a known carcinogen.
Mutagenicity: Not Known.
Teratogenicity: Not Known.

Acute Toxicity:

Oral (LD 50): No data available

Inhalation (LC 50): No data available

Skin irritation: Causes severe skin burns and eye damage

Eye irritation: Causes serious eye damage

Sensitation: No data available

Chronic Toxicity: IARC Group 3; Not classifiable as a human carcinogen

12 ECOLOGICAL INFORMATION

This product is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a national pollutant discharge elimination system (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your state water board or regional office of the EPA.

13 DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Do not reuse container.

14 TRANSPORT INFORMATION

DOT: Not regulated. Classified as non-hazardous.

15 REGULATORY INFORMATION

COMPONENT / (CAS/PERC) / CODES

*Sodium hypochlorite (7681529 5.25-5.40%) CERCLA, CSWHS, MASS, PA, TSCA

*Water (7732185 94.60-94.75%) TSCA

REGULATORY KEY DESCRIPTIONS

CERCLA = Superfund clean up substance
CSWHS = Clean Water Act Hazardous substances
MASS = MA Massachusetts Hazardous Substances List
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act

OSHAWAC = OSHA Workplace Air Contaminants
TXAIR = TX Air Contaminants with Health Effects Screening Level

16	OTHER INFORMATION

Author: James Austin Company

Publication Date: 12/11/2014

Revision Note: MSDS converted to GHS SDS format

Disclaimer: James Austin Company provides this information without warranty. The information is believed to be accurate, but James Austin Company makes no representations as to its accuracy. The information should be used to make an independant determination and therefore, users are responsible to verify this data under their own operating conditions and methods. This information relates only to the product designated herein, and does not relate to its use in combination with other materials or processes.

NALCO
An Ecolab Company

SAFETY DATA SHEET

460-S0800 SOLN 10% Sulfuric Acid, Form Liquid

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	460-S0800 SOLN 10% Sulfuric Acid, Form Liquid
Other means of identification	:	Not applicable.
Recommended use	:	REAGENT
Restrictions on use	:	Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
Company	:	Nalco Company 1601 W. Diehl Road Naperville, Illinois 60563-1198 USA TEL: (630)305-1000
Emergency telephone number	:	(800) 424-9300 (24 Hours) CHEMTREC
Issuing date	:	06/30/2014

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

WARNING
Irritating to eyes and skin.
Do not get in eyes, on skin, on clothing. Do not take internally. Keep container tightly closed. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.
Wear suitable protective clothing, gloves and eye/face protection.
Not flammable or combustible. May evolve oxides of sulfur (SOx) under fire conditions.

Potential Health Effects

Eyes	:	May cause serious eye damage if not treated promptly.
Skin	:	Causes skin burns.
Ingestion	:	Causes digestive tract burns.
Inhalation	:	Inhalation of vapours may cause mild irritation to the mucous membrane.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Concentration: (%)
Sulfuric Acid	7664-93-9	5.0 - 10.0

SECTION 4. FIRST AID MEASURES

In case of eye contact	:	Immediately flush eye with water for at least 15 minutes while holding eyelids open. If irritation persists, repeat flushing. Get immediate medical attention.

In case of skin contact	:	Immediately flush with plenty of water for at least 15 minutes. If symptoms persist, call a physician.
If swallowed	:	Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. Get medical attention.
If inhaled	:	Remove to fresh air, treat symptomatically. Get medical attention.
Protection of first-aiders	:	In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders.Use personal protective equipment as required.

See toxicological information (Section 11)

SECTION 5. FIREFIGHTING MEASURES

Specific hazards during firefighting	:	Not flammable or combustible. May evolve oxides of sulfur (SOx) under fire conditions.
Special protective equipment for firefighters	:	In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Restrict access to area as appropriate until clean-up operations are complete. Ensure clean-up is conducted by trained personnel only. Ventilate spill area if possible. Do not touch spilled material. Stop or reduce any leaks if it is safe to do so. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Notify appropriate government, occupational health and safety and environmental authorities.
Environmental precautions	:	Do not contaminate surface water.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Avoid eye and skin contact. Do not take internally. Do not get in eyes, on skin, on clothing. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Ensure all containers are labeled. Keep the containers closed when not in use. Use with adequate ventilation.
Conditions for safe storage	:	Store the containers tightly closed. Store in suitable labeled containers.
Unsuitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: Do not use aluminum or mild steel.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below.

Components	CAS-No.	Form of exposure	Permissible concentration	Basis
Sulfuric Acid	7664-93-9	TWA (Thoracic fraction)	0.2 mg/m3	ACGIH
		TWA	1 mg/m3	NIOSH REL
		TWA	1 mg/m3	OSHA Z1

Engineering measures : General ventilation is recommended.

Personal protective equipment

Eye protection : Wear a face shield with chemical splash goggles.

Hand protection : Wear the following personal protective equipment:
Standard glove type.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin protection : Wear standard protective clothing.

Respiratory protection : When required by use conditions, wear an approved respirator.

HUMAN EXPOSURE CHARACTERIZATION :
Based on our recommended product application and personal protective equipment, the potential human exposure is: Low

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Liquid

Colour : Colorless

Odour : None

Flash point : does not flash

pH : < 1, 100 %
Method: ASTM E 70

Odour Threshold : no data available

Melting point/freezing point : no data available

Initial boiling point and boiling range : no data available

Evaporation rate : no data available

Flammability (solid, gas) : no data available

Upper explosion limit : no data available

Lower explosion limit : no data available

Vapour pressure : similar to water

Relative vapour density : no data available

Relative density : 1.0 (25 °C)

Density : no data available

Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
VOC	:	no data available

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Freezing temperatures.
Incompatible materials	:	Contact with strong alkalies (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors. Organic materials
Hazardous decomposition products	:	Oxides of sulfur

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Eyes	:	May cause serious eye damage if not treated promptly.
Skin	:	Causes skin burns.
Ingestion	:	Causes digestive tract burns.
Inhalation	:	Inhalation of vapours may cause mild irritation to the mucous membrane.

Experience with human exposure

Toxicity

Product

Acute oral toxicity	:	no data available
Acute inhalation toxicity	:	LC50 rat: 347 mg/l Exposure time: 1 hrs Test substance: Hazardous component
Acute dermal toxicity	:	no data available
Skin corrosion/irritation	:	Species: Rabbit Result: 8.0 Method: Draize Test

Test substance:Hazardous component

Serious eye damage/eye irritation	:	Species: rabbit Result: 110.0 Method: Draize Test Test substance: Hazardous component
Respiratory or skin sensitization	:	no data available
Carcinogenicity	:	no data available
Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	no data available

HUMAN HAZARD CHARACTERIZATION
Based on our hazard characterization, the potential human hazard is: High

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxicity to fish	:	no data available
Toxicity to daphnia and other aquatic invertebrates	:	no data available
Toxicity to algae	:	no data available

Persistence and degradability

Greater than 95% of this product consists of inorganic substances for which a biodegradation value is not applicable.

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.
If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	30 - 50%
Soil	:	50 - 70%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Low

Based on our recommended product application and the product's characteristics, the potential environmental exposure is: Low

SECTION 13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it could meet the criteria of a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Before disposal, it should be determined if the waste meets the criteria of a hazardous waste.

Hazardous Waste:	:	D002
Disposal methods	:	Disposal of test solution may be accomplished by flushing into a waste water treatment system which has a pH control system in operation.

SECTION 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

Proper shipping name	:	SULFURIC ACID (with not more than 51% acid)
Technical name(s)	:	Sulfuric Acid
UN/ID No.	:	UN 2796
Transport hazard class(es)	:	8
Packing group	:	II
Reportable Quantity (per package)	:	10,000 lbs
RQ Component	:	SULFURIC ACID

Air transport (IATA)

Proper shipping name	:	SULFURIC ACID (with not more than 51% acid)
Technical name(s)	:	Sulfuric Acid
UN/ID No.	:	UN 2796
Transport hazard class(es)	:	8
Packing group	:	
Reportable Quantity (per package)	:	10,000 lbs
RQ Component	:	SULFURIC ACID

Sea Transport (IMDG/IMO)

Proper shipping name	:	SULFURIC ACID (with not more than 51% acid)
Technical name(s)	:	Sulfuric Acid
UN/ID No.	:	UN 2796
Transport hazard class(es)	:	8
Packing group	:	II

SECTION 15. REGULATORY INFORMATION

California Prop 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

INTERNATIONAL CHEMICAL CONTROL LAWS :

TOXIC SUBSTANCES CONTROL ACT (TSCA)
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)
The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA
All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

EUROPE
The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

JAPAN
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

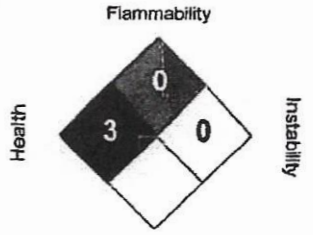
NEW ZEALAND
All substances in this product comply with the Hazardous Substances and New Organisms (HSNO) Act 1996,and are listed on or are exempt from the New Zealand Inventory of Chemicals.

PHILIPPINES
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

SECTION 16. OTHER INFORMATION

460-S0800 SOLN 10% Sulfuric Acid, Form Liquid

NFPA:



Special hazard.

HMIS III:

HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Low

* The environmental risk is: Low

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

Revision Date	: 06/30/2014
Version Number	: 1.6
Prepared By	: Regulatory Affairs

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

For additional copies of an MSDS visit www.nalco.com and request access.

Univar
3075 Highland Pkwy STE 200
Downers Grove, IL 60515
425-889-3400

SAFETY DATA SHEET

1. Identification

Product identifier: - HYDROGEN PEROXIDE 35 - 40%

Other means of identification

SDS number: 000100000437

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Emergency telephone number:For emergency assistance Involving chemicals

call CHEMTREC day or night at: 1-800-424-9300. CHEMTREC INTERNATIONAL Tel# 703-527-3887

2. Hazard(s) identification

Hazard classification

Physical hazards

Oxidizing liquids	Category 2

Label elements

Hazard symbol

Signal word Danger

Hazard statement	Causes serious eye damage. Harmful if swallowed. Harmful if inhaled. May cause irritation to the respiratory system. Causes skin irritation. May intensify fire; oxidizer.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep away from clothing and other combustible materials. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.
Response	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell. Rinse mouth. Take off contaminated clothing and wash before reuse. In case of fire: Use ... to extinguish.
Storage	Store in a closed container. Keep container tightly closed. Store in a well-ventilated place. Store in a dry place. Store away from other materials.
Disposal	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	None.

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
Hydrogen peroxide (H2O2)		7722-84-1	40%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion: Do NOT induce vomiting. Never give liquid to an unconscious person. Get medical attention immediately. Rinse mouth thoroughly.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Perform artificial respiration if breathing has stopped. Get medical attention immediately.

Skin contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing and wash the skin thoroughly with soap and water after work.

Eye contact: If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor. Get medical attention immediately. Rinse immediately with plenty of water.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Get medical attention if symptoms occur.

5. Fire-fighting measures

General fire hazards: No data available.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use: Water Spray or Fog. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical:	Oxidizer. Not combustible. Reaction with combustible materials, ammonium salts, or foreign substances may increase the fire hazard. Thermally unstable. Decomposes at fire temperature and is self-sustaining even if heat source is removed. Closed containers may rupture violently when heated.

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	No data available.
Special protective equipment for fire-fighters:	No data available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing mist.
Methods and material for containment and cleaning up:	Absorb spillage with non-combustible, absorbent material. Dike for later disposal.

7. Handling and storage

Precautions for safe handling:	Use personal protective equipment as required. Wash thoroughly after handling. Use only with adequate ventilation. Wash contaminated clothing before reuse.
Conditions for safe storage, including any incompatibilities:	Keep container tightly closed. Keep containers closed when not in use. Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures. Protect from light, including direct sunrays.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
Hydrogen peroxide (H2O2)	TWA	1 ppm	US. ACGIH Threshold Limit Values (03 2013)
	REL	1 ppm 1.4 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	1 ppm 1.4 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	1 ppm 1.4 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	1 ppm 1.4 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL	14 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL	10 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	1.4 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	1 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
Hydrogen peroxide (H2O2) - as H2O2	TWA PEL	1 ppm 1.4 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)

Appropriate engineering controls No data available.

Individual protection measures, such as personal protective equipment

General information:	Do not eat, drink or smoke when using the product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.
Eye/face protection:	Wear tight-fitting goggles or face shield.
Skin protection	
Hand protection:	Use suitable protective gloves if risk of skin contact.
Other:	Wear suitable protective clothing as protection against splashing or contamination.
Respiratory protection:	In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Seek advice from supervisor on the company's respiratory protection standards. If ventilation is insufficient, suitable respiratory protection must be provided.
Hygiene measures:	No data available.

9. Physical and chemical properties

Physical state:	Liquid
Form:	Clear Liquid
Color:	Colorless
Odor:	Odorless
Odor threshold:	No data available.
pH:	3.7
Melting point/freezing point:	-33 - -15 °C
Initial boiling point and boiling range:	100 - 176 °C
Flash Point:	Does not flash
Evaporation rate:	> 1
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.

Vapor pressure:	30.664 hPa
Vapor density:	No data available.
Relative density:	1.13
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	1.5
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical stability:	No data available.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	No data available.
Incompatible materials:	Strong oxidizer - avoid contact with reducing agents.
Hazardous decomposition products:	No data available.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available.
Inhalation:	No data available.
Skin contact:	No data available.
Eye contact:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product:	ATEmix (): 1,026 mg/kg

Dermal

Product:	No data available.

Specified substance(s):

Hydrogen peroxide (H2O2)	LD 50 (Rabbit): 9,200 mg/kg (, No) 4 (not assignable)

Inhalation

Product: LC 50 (Rat, 4 h): >= 0.17 mg/l

Repeated dose toxicity

Product: No data available.

Skin corrosion/irritation

Product: No data available.

Serious eye damage/eye irritation

Product: No data available.

Respiratory or skin sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ cell mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific target organ toxicity - single exposure

Product: No data available.

Specific target organ toxicity - repeated exposure

Product: No data available.

Aspiration hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product:	No data available.
Specified substance(s):	
Hydrogen peroxide (H2O2)	LC 50 (Chameleon goby (Tridentiger trigonocephalus), 24 h): 155 mg/l Mortality LC 50 (Jack Mackerel (Trachurus japonicus), 24 h): 89 mg/l Mortality

Aquatic invertebrates

Product:	No data available.

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.

Aquatic invertebrates

Product:	No data available.

Toxicity to Aquatic Plants

Product:	No data available.

Persistence and degradability

Biodegradation

Product:	No data available.

BOD/COD ratio

Product:	No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product:	No data available.

Partition coefficient n-octanol / water (log Kow)

Product:	Log Kow: 1.5

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Hydrogen peroxide	No data available.

Known or predicted distribution to environmental compartments

Water	No data available.

13. Disposal considerations

Disposal instructions: Dispose of waste and residues in accordance with local authority requirements. Since emptied containers retain product residue, follow label warnings even after container is emptied.

Contaminated packaging: No data available.

14. Transport information

DOT

UN number:	UN 2014
UN proper shipping name:	Hydrogen peroxide, aqueous solutions
Transport hazard class(es)	
Class:	5.1
Label(s):	5.1, 8
Packing group:	II
Marine Pollutant:	Not regulated.
Special precautions for user:	–

IMDG

UN number:	UN 2014
UN proper shipping name:	Hydrogen peroxide, aqueous solution
Transport hazard class(es)	
Class:	5.1
Label(s):	5.1, 8
EmS No.:	F-H, S-Q
Packing group:	II
Marine Pollutant:	Not regulated.
Special precautions for user:	–

IATA

UN number:	UN 2014
Proper Shipping Name:	Hydrogen peroxide, aqueous solution
Transport hazard class(es):	
Class:	5.1
Label(s):	5.1, 8
Packing group:	II
Environmental hazards	Not regulated.
Special precautions for user:	–
Other information	
Passenger and cargo aircraft:	Allowed.
Cargo aircraft only:	Allowed.

15. Regulatory information

US federal regulationsUS. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

☐ Acute (Immediate) ☐ Chronic (Delayed) ☐ Fire ☐ Reactive ☐ Pressure Generating

SARA 302 Extremely hazardous substance

Chemical identity	RQ	Threshold Planning Quantity
Hydrogen peroxide (H2O2)	1000 lbs.	1000 lbs.

SARA 304 Emergency release notification

Chemical identity	RQ
Hydrogen peroxide (H2O2)	

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
Hydrogen peroxide (H2O2)	500lbs

SARA 313 (TRI reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

Hydrogen peroxide (H2O2) Listed

US. Massachusetts RTK - Substance List

Hydrogen peroxide (H2O2) Listed

US. Pennsylvania RTK - Hazardous Substances

Hydrogen peroxide (H2O2) Listed

US. Rhode Island RTK

Hydrogen peroxide (H2O2) Listed

Version: 0.0
Revision date: 09/22/2015

Inventory Status: Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	Not in compliance with the inventory.
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.
Australia AICS:	Not in compliance with the inventory.
Canada DSL Inventory List:	Not in compliance with the inventory.
EU EINECS List:	Not in compliance with the inventory.
Japan (ENCS) List:	Not in compliance with the inventory.
Philippines PICCS:	Not in compliance with the inventory.
US TSCA Inventory:	Not in compliance with the inventory.
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.

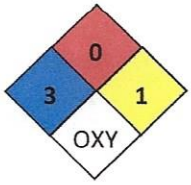
16.Other information, including date of preparation or last revision

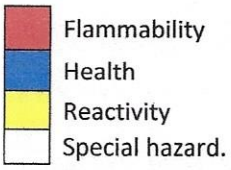
HMIS Hazard ID

H - Goggles, Gloves, Apron & Vapor Respirator

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; *Chronic health effect

NFPA Hazard ID





Version: 0.0
Revision date: 09/22/2015

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
OXY: Oxidizer

Issue date:	09/22/2015
Revision date:	No data available.
Version #:	0.0
Further information:	No data available.

Univar USA Inc Material Safety Data Sheet

Univar USA Inc., 17425 NE Union Hill Rd., Redmond WA 98052
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFIER: SODIUM HYDROXIDE, SOLID

RECOMMENDED USAGE: Neutralizing agent, industrial cleaner, pulping and bleaching, catalyst

MANUFACTURER : TRInternational Inc.
600 Stewart Street Suite 1801
Seattle, WA 98101
Tel: 206-505-3500
Fax: 206-505-3501

EMERGENCY PHONE NUMBER: **Infotrac** 800-535-5053
352-323-3500 Account #79932

SECTION 2 HAZARDS IDENTIFICATION

GHS Classification

Health	Environmental	Physical
Skin corrosion/irritation -Category 1 Serious eye damage/eye irritation -Category 1 Specific target organ toxicity -Single exposure - Category 1(respiratory system)	Acute toxicity to the aquatic environment -Category 3	No data available

GHS Label

Symbols:

Signal word: Danger,

Hazard Statements	Precautionary Statements
Causes severe skin burns and eye damage Causes serious eye damage Causes damage to respiratory system Harmful to aquatic life	[Prevention] Do not breathe dust/fume. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. [Response] IF SWALLOWED : Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue

	rinsing. Immediately call a POISON CENTER or doctor/ physician. Wash contaminated clothing before reuse. [Storage] Store locked up. [Disposal] Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3 COMPOSITION, INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY: SODIUM HYDROXIDE, SOLID
TRADE NAMES/SYNONYMS:
CAUSTIC SODA; SODA LYE; LYE; WHITE CAUSTIC; BEAD; DRY; FLAKE; SOLID; SODIUM HYDRATE; SODIUM HYDROXIDE (NaOH); DRY SOLID, FLAKE, PRILL, BEAD, OR GRANULAR; UN 1823; NaOH;

CAS-No	Name	% Weight
1310-73-2	Sodium Hydroxide	98 - 99
497-19-8	Sodium Carbonate	0.5 – 1.5
7732-18-5	Deionized Water	0.5

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing and shoes before reuse. Destroy contaminated shoes.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15minutes. Then get immediate medical attention.

INGESTION: If swallowed, drink plenty of water, do NOT induce vomiting. Get immediate medical attention.
NOTE TO PHYSICIAN: For inhalation, consider oxygen. Avoid gastric lavage or emesis.

SECTION 5 FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam
Large fires: Use regular foam or flood with fine water spray.
FIRE AND EXPLOSION HAZARDS: Negligible fire hazard.
FIRE FIGHTING: Move container from fire area if it can be done without risk.
Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks.

SECTION 6 ACCIDENTAL RELEASE MEASURES

-PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT & EMERGENCY PROCEDURES:

-ENVIRONMENT PRECAUTION:
SOIL RELEASE: Dig holding area such as lagoon, pond or pit for containment. Cover with plastic sheet or tarpaulin to minimize spreading and protect from contact with water.

WATER RELEASE: Neutralize.

-METHODS & MATERIALS FOR CONTAINMENT & CLEANING UP
Do not touch spilled material. Stop leak if possible without personal risk.

Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal.
Small dry spills: Move containers away from spill to a safe area.
Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry.

SECTION 7 HANDLING AND STORAGE

-PRECAUTIONS FOR SAFE HANDLING:
Use smallest possible amounts in designated areas with adequate ventilation. Keep containers closed when not in use. Empty containers may contain hazardous residues. Transfer solids using tools or equipment, which are corrosion -resistant. Cautiously, transfer into sturdy containers made of compatible materials. Never return contaminated material to its original container. Considerable heat is generated when diluted with water. Proper handling procedures must be followed to prevent vigorous boiling, splattering or violent eruption of the diluted solution. Never add water to caustic. ALWAYS ADD CAUSTIC TO WATER and provide agitation. When mixing with water, stir small amounts in slowly. Use cold water to prevent excessive heat generation. In general, keep solid sodium hydroxide away from water.

-PRECAUTIONS FOR SAFE STORAGE (including any incompatibilities):
Store in a cool, dry, well-ventilated area. This material absorbs water. Keep containers tightly closed when not in use and when empty. Protect from damage.
Store away from incompatable materials such as strong acids, nitroaromatic, nitroparaffinnic or organohalogen compounds. Use corrosion-resistant structural materials and lighting and ventilation systems in the storage area. Containers made of nickel alloys are preferred. Steel containers are acceptable if temperatures are not elevated. Nickel is the preferred metal from handling this product. Plastics or plastic-lined steel, or FRP tanks of derakane vinyl ester resin may be suitable. If outdoor storage of pearl caustic is unavailable, the pallets should be protected against extremes of weather.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

-CONTROL PARAMETERS:
OCCUPATIONAL EXPOSURE LIMIT or BIOLOGICAL LIMIT VALUE:

2 mg/m3 MINISTRY OF LABOUR, THAILAND TLV-C
2 mg/m3 OSHA TWA
2 mg/m3 OSHA ceiling (vacated by 58 FR 35338, June 30, 1993)
2 mg/m3 ACGIH ceiling
2 mg/m3 NIOSH recommended ceiling

-APPROPRIATE ENGINEERING CONTROLS:

Local exhaust ventilation should be applied wherever there is an incidence of point source emissions or dispersion of regulated contaminants in the work area. Ventilation control of the contaminant as close to its point of generation is both the most economical and safest method to minimize personnel exposure to airborne contaminants. The most effective measures are the total enclosure of processes and the mechanization of handling procedures to prevent all personal contact. VENTILATION: Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Maintain eye wash fountain and quick-drench facilities in work area. Detailed requirements for personal protective equipment should be established on a site-specific basis.
EYE PROTECTION:Wear full face-shield and chemical safety goggles when there is potential for contact.
SKIN PROTECTION:Wear appropriate personal protective clothing to prevent skin contact. Chemical protective clothing composed of natural rubber, neoprene, nitrile, or styrene/butadiene (SBR)-coated fabric is highly recommended, having break through times greater than one hour. Butyl rubber, polyethylene, chlorinated polyurethane, or polyvinyl alcohol may be used but data suggests breakthrough times of approximately an hour or more.

RESPIRATORY PROTECTION:

Up To 10 mg/m3 : Supplied Air Respirator (SAR) operated in a continuous-flow mode, eye protection needed; or full-facepiece respirator with high-efficiency particulate filter(s); or powered air-purifying respirator with dust and mist filter(s) , eye protection needed; or full-facepiece Self-Contained Breathing Apparatus (SCBA); or full-facepiece SAR.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions: Positive pressure, full-facepiece SAR; or positive pressure, full-facepiece SAR with an auxiliary positive pressure SAR.
ESCAPE: Full-facepiece respirator with high-efficiency particulate filter(s); or escape-type SCBA

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
PHYSICAL STATE: Solid
COLOR: white
CHANGE IN APPEARANCE: hygroscopic
ODOR: odorless
ODOR THRESHOLD: No data available
MOLECULAR FORMULA: Na-0-H
MOLECULAR WEIGHT: 40.00
pH: 12-14 (5% solution)
MELTING POINT: 604 F (318 C)
BOILING POINT: 2534 F (1390 C)
FLASH POINT: No data available
EVAPORATION RATE: No data available
FLAMMABILITY (solid, gas): No data available
VAPOR PRESSURE: No data available
VAPOR DENSITY: No data available

RELATIVE DENSITY (water=1): 2.130

SOLUBILITY IN WATER: VERY soluble (108 g/100 ml at 20 ° C(68°F))

SOLVENT SOLUBILITY: Soluble: alcohol, glycerol Insoluble: acetone, ether

PARTITION COEFICIENT *n-octanol /water:* No data available

AUTO-IGNITION TEMPERATURE: No data available

DECOMPOSITION TEMPERTURE: No data available

SECTION 10 STABILITY AND REACTIVITY

- CHEMICAL STABILITY : Stable at room temperature. Rapidly absorbs carbon dioxide from the air, forming sodium carbonate. Rapidly absorbs moisture from the air
- POSSIBILITY OF HAZARDOUS REACTIONS:

REACTIVITY: May react with evolution of heat on contact with water.

- CONDITIONS TO AVOID: Water, moisture, and air. Dangerous gases may accumulate in confined spaces. May ignite or explode on contact with combustible materials.
- INCOMPATIBILITIES: combustible materials, acids, halo carbons, metals, halogens, oxidizing materials, peroxides, metal salts

SECTION 11 TOXICOLOGICAL INFORMATION

Health Hazardous (Acute and Chronic)
(sodium hydroxide, dry)
Genetic Toxicity (IUCLID Release 3.1, 2000.2)
DNA Damage and repair assay: negative

Irritation:
Skin: rabbit 1mg/24h Severe
Eye(s):"rabbit 400µg Mild, 1 % Severe, 50µg/24h Severe, 1mg/30s rinse Severe
Toxic Oral: rabbit LDL_0: 500 mg/kg

Carcinogenic classification:

NTP : Not Established.

IARC Monographs : Not Established.

OSHA Regulated : Not Established.

Other information: Since burns of the skin or membrane by contact is based on the dissolution action to the protein of alkali as compared with acid, generally, wound is moist and an ulcer tends to advance deeply, so it is more critical than the burn by acid.

SECTION 12 ECOLOGICAL INFORMATION

Fish: LD_{50}: 189 mg/l (1N solution = 40 g/l) EC_0 < 20 mg/l Aquatic organism: LDso: 10-100 mg/l 96 h. High toxic to fish and plankton due to pH changing. But not result in a lack of oxygen in ecological system.

SECTION 13 DISPOSAL CONSIDERATIONS

Review federal, state and local government requirements prior to disposal. Do not dispose of waste with normal garbage, or to sewer systems. Whatever cannot be saved for recovery or recycling, including containers, should be managed in an appropriate and approved waste disposalfacility. Processing, use or contamination of this product may change the waste management options.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Sodium hydroxide, solid
ID NUMBER: UN1823
HAZARD CLASS OR DIVISION: 8
PACKING GROUP: II

LAND TRANSPORT ADR/RID:

PROPER SHIPPING NAME: Sodium hydroxide, solid
UN NUMBER: UN1823
ADR/RID CLASS: 8
CLASSIFICATION CODE: C6
PACKING GROUP: II

AIR TRANSPORT IATA/ICAO:

PROPER SHIPPING NAME: Sodium hydroxide, solid
UN/ID NUMBER: UN1823
IATA/ICAO CLASS: 8
PACKING GROUP: II

MARITIME TRANSPORT IMDG:

PROPER SHIPPING NAME: Sodium hydroxide, solid
UN NUMBER: UN1823
IMDG CLASS: 8
PACKING GROUP: II
CAS NO: 1310-73-2
HS CODE: 2815.1100.000

SECTION 15 REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): 1000 LBS RQ

SARA TITLE 111 SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):
Not regulated.

SARA TITLE 111 SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
Not regulated.

SARA TITLE 111 SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes
CHRONIC: No
FIRE: No
REACTIVE: Yes
SUDDEN RELEASE: No
SARA TITLE III SECTION 313 (40 CFR 372.65) : Not regulated.
OSHA PROCESS SAFETY (29CFR1910. 119): Not regulated.

EUROPEAN REGULATIONS:
EC CLASSIFICATION (ASSIGNED):
C Corrosive
EC Classification may be inconsistent with independently-researched data.

DANGER/HAZARD SYMBOL:
C Corrosive

EC RISK AND SAFETY PHRASES:
R 35 Causes severe burns.
S Keep locked-up and out of reach of children.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 37/39 Wear suitable gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

CONCENTRATION LIMITS:

C>=5%	C	R35
2%<=C<5%	C	R 34
0.5%<=C<2%	Xi	R 36/38

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

THAILAND REGULATIONS:
Notification of The Ministry of Industry: Type 1 Hazardous Substance (September 22, 2003)

Notification of The Ministry of Agriculture and Cooperatives: Type 1 Hazardous

Notification of The Ministry of Interior: Working Safety Relating to Harmful Chemicals (September 24, 1991)

Standard for Sodium Hydroxide for Industrial Use: TIS. 150-2006

SECTION 16 OTHER INFORMATION

Revise: 0
Date:
Target for the next revision: April 2020

This chemical is certified to ANSI/NSF Standard 60, Drinking Water Treatment Chemicals - Health Effects. The maximum use for potable water is 100 mg/l.

The information in this SOS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its accuracy and/or completeness. User should consult experts in their review of this SOS prior to use of the product.

For Additional Information contact SDS Coordinator during business hours, Pacific time: (425) 889-3400

Notice

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This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process

NALCO
An Ecolab Company

SAFETY DATA SHEET

NALMET® 1689

Section: 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	NALMET® 1689
Other means of identification	:	Not applicable.
Recommended use	:	WATER CLARIFICATION AID
Restrictions on use	:	Refer to available product literature or ask your local Sales Representative for restrictions on use and dose limits.
Company	:	Nalco Company 1601 W. Diehl Road Naperville, Illinois 60563-1198 USA TEL: (630)305-1000
Emergency telephone number	:	(800) 424-9300 (24 Hours) CHEMTREC
Issuing date	:	12/01/2015

Section: 2. HAZARDS IDENTIFICATION

GHS Classification

Eye irritation	:	Category 2B

GHS Label element

Signal Word	:	Warning
Hazard Statements	:	Causes eye irritation.
Precautionary Statements	:	**Prevention:** Wash skin thoroughly after handling. **Response:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.
Other hazards	:	None known.

Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture	:	Mixture

Chemical Name	CAS-No.	Concentration: (%)
Sodium Chloride	7647-14-5	1 - 5
Sodium Sulphide	1313-82-2	1 - 5
Sodium Hydroxide	1310-73-2	0.1 - 1

Section: 4. FIRST AID MEASURES

In case of eye contact	:	Rinse with plenty of water. Get medical attention if symptoms occur.

In case of skin contact	:	Wash off with soap and plenty of water. Get medical attention if symptoms occur.
If swallowed	:	Rinse mouth. Get medical attention if symptoms occur.
If inhaled	:	Get medical attention if symptoms occur.
Protection of first-aiders	:	In event of emergency assess the danger before taking action. Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.
Notes to physician	:	Treat symptomatically.
Most important symptoms and effects, both acute and delayed	:	See Section 11 for more detailed information on health effects and symptoms.

Section: 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	None known.
Specific hazards during firefighting	:	Not flammable or combustible.
Hazardous combustion products	:	Decomposition products may include the following materials: Carbon oxides Sulphur oxides Hydrogen chloride metal oxides
Special protective equipment for firefighters	:	Use personal protective equipment.
Specific extinguishing methods	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

Section: 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Do not allow contact with soil, surface or ground water.
Methods and materials for containment and cleaning up	:	Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Flush away traces with water.

Section: 7. HANDLING AND STORAGE

Advice on safe handling	:	Wash hands thoroughly after handling. Use only with adequate ventilation.
Conditions for safe storage	:	Do not store near acids. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.
Suitable material	:	The following compatibility data is suggested based on similar product data and/or industry experience: Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.
Unsuitable material	:	Brass, coated steelnot determined

Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	:	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection	:	Safety glasses
Hand protection	:	Wear protective gloves. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Skin protection	:	Wear suitable protective clothing.
Respiratory protection	:	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling.

Section: 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Colour	:	brown
Odour	:	Sulfurous
Flash point	:	Method: ASTM D 93, Pensky-Martens closed cup does not flash
pH	:	13.1, 100 %
Odour Threshold	:	no data available
Melting point/freezing point	:	no data available

Initial boiling point and boiling range	:	no data available
Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Relative density	:	1.10 - 1.35 (25 °C)
Density	:	9.2 - 11.2 lb/gal
Water solubility	:	completely soluble
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Auto-ignition temperature	:	no data available
Thermal decomposition temperature	:	no data available
Viscosity, dynamic	:	no data available
Viscosity, kinematic	:	no data available
Molecular weight	:	no data available
VOC	:	0 % 0 g/l EPA Method 24

Section: 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	None known.
Incompatible materials	:	Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. May release SO2 or hydrogen sulfide on contact with acids.
Hazardous decomposition products	:	Decomposition products may include the following materials: Carbon oxides nitrogen oxides (NOx) Sulphur oxides metal oxides

Section: 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes : Causes eye irritation.

Skin : Health injuries are not known or expected under normal use.

Ingestion : Health injuries are not known or expected under normal use.

Inhalation : Health injuries are not known or expected under normal use.

Chronic Exposure : Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact : Redness, Irritation

Skin contact : No symptoms known or expected.

Ingestion : No symptoms known or expected.

Inhalation : No symptoms known or expected.

Toxicity

Product

Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg

Acute inhalation toxicity : no data available

Acute dermal toxicity : Acute toxicity estimate : > 5,000 mg/kg

Skin corrosion/irritation : Result: No skin irritation
Test substance:Similar Product

Serious eye damage/eye irritation : Result: Irritation to eyes, reversing within 7 days
Test substance: Similar Product

Respiratory or skin sensitization : no data available

Carcinogenicity : no data available

Reproductive effects : no data available

Germ cell mutagenicity : no data available

Teratogenicity	:	no data available
STOT - single exposure	:	no data available
STOT - repeated exposure	:	no data available
Aspiration toxicity	:	no data available

Section: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects	:	Harmful to aquatic life.

Product

Toxicity to fish	:	LC50 Oncorhynchus mykiss (rainbow trout): 74 mg/l Exposure time: 96 hrs Test substance: Product LC50 Cyprinodon variegatus (sheepshead minnow): > 1,000 mg/l Exposure time: 96 hrs Test substance: Product NOEC Oncorhynchus mykiss (rainbow trout): < 40 mg/l Exposure time: 96 hrs Test substance: Product NOEC Cyprinodon variegatus (sheepshead minnow): 400 mg/l Exposure time: 96 hrs Test substance: Product NOEC Pimephales promelas (fathead minnow): 432 mg/l Exposure time: 96 h Test substance: Product LC50 Pimephales promelas (fathead minnow): 602 mg/l Exposure time: 96 h Test substance: Product
Toxicity to daphnia and other aquatic invertebrates	:	LC50 Daphnia magna (Water flea): 73 mg/l Exposure time: 48 hrs Test substance: Product EC50 Daphnia magna (Water flea): 18 mg/l Exposure time: 48 hrs Test substance: Product NOEC Daphnia magna (Water flea): 5 mg/l Exposure time: 48 hrs Test substance: Product

Toxicity to fish (Chronic toxicity)	:	ChV: 85.6 mg/l Exposure time: 7 d Species: Fathead Minnow Test substance: Product LOEC: 121 mg/l Exposure time: 7 d Species: Fathead Minnow Test substance: Product NOEC: 60.5 mg/l Exposure time: 7 d Species: Fathead Minnow Test substance: Product EC25 / IC25: 27.2 mg/l Exposure time: 7 d Species: Fathead Minnow Test substance: Product Chronic Toxicity Value: 10.7 mg/l Exposure time: 7 d Species: Fathead Minnow Test substance: Product LOEC: 15.1 mg/l Exposure time: 7 d Species: Fathead Minnow Test substance: Product NOEC: 7.56 mg/l Exposure time: 7 d Species: Fathead Minnow Test substance: Product
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Chronic Toxicity Value: > 4.84 mg/l Exposure time: 7 d Species: Ceriodaphnia dubia Test substance: Product LOEC: > 4.84 mg/l Exposure time: 7 d Species: Ceriodaphnia dubia Test substance: Product NOEC: 4.84 mg/l Exposure time: 7 d Species: Ceriodaphnia dubia Test substance: Product EC25 / IC25: 2.75 mg/l Exposure time: 7 d Species: Ceriodaphnia dubia Test substance: Product

Chronic Toxicity Value: 3.42 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

LOEC: 4.84 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

NOEC: 2.42 mg/l
Exposure time: 7 d
Species: Ceriodaphnia dubia
Test substance: Product

Persistence and degradability

The organic portion of this preparation is expected to be poorly biodegradable.

Chemical Oxygen Demand (COD): 420,000 mg/l

Mobility

The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM, provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models.
If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	:	<5%
Water	:	30 - 50%
Soil	:	> 90%

The portion in water is expected to be soluble or dispersible.

Bioaccumulative potential

This preparation or material is not expected to bioaccumulate.

Other information

no data available

Section: 13. DISPOSAL CONSIDERATIONS

The information presented only applies to the material as supplied. The classification or waste code may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Disposal methods : The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in