Approved By

Incident Commander: Goedde, Ed

Incident Action Plan

Table of Contents

Incident Name: 2018 Superior Refinery Fire	Period: Period 5 [05/05/18 06:00 - 05/07/18 06:00]

Report Name	*Page*
IAP Cover Sheet	1
Weather Report	3
Map/Sketch	4
ICS 202 - Incident Objectives	7
ICS 202b - Critical Information Requirements	8
ICS 204 - Assignment List	9
ICS 205 - Radio Communications	41
ICS 205a - Communications List	42
ICS 206 - Medical Plan	43
ICS 207 - Organization Chart	51
ICS 208 - Site Safety Plan	53
Asbestos Remediation Plan	55

Present Conditions

Weather Conditions as of 05/04/2018 14:55

superior, wi us station id: MID_KSUW

Humidity (%):	22	***Pressure:***	29.83 psi
Wind Speed:	17 mph	***Dew Point:***	32
Wind Direction (from):	NW	***Feels Like:***	74
Temperature:	74 Fahrenheit	***UV Index:***	
Visibility:	10 mile(s)		

This afternoon: Sunny, with a high near 72. Breezy, with a northwest wind around 15 mph, with gusts as high as 25 mph.

Forecast Date	*Wind*	*Temp High/Low*	*% Precip*	*Sunrise/ Sunset*	*Notes*
Fri 05/04/2018	4 mph WNW	42 F	6		Mostly clear, with a low around 44. Breezy, with a west wind 10 to 15 mph becoming light northwest after midnight
Sat 05/05/2018	7 mph SSW	67 F	25		A 30 percent chance of showers, mainly after 3pm. Increasing clouds, with a high near 60. Southwest wind 5 to 10 mph becoming northeast in the afternoon.
	7 mph NE	37 F	9	20:21	A 20 percent chance of showers before 1am. Partly cloudy, with a low around 35. Northeast wind 5 to 10 mph.
Sun 05/06/2018	6 mph NNE	60 F	8		Sunny, with a high near 58. Northeast wind around 5 mph.
	3 mph NNE	35 F	1		Mostly clear, with a low around 38.r
Mon 05/07/2018	8 mph SW	69 F	2		Mostly clear, with a low around 38.
	7 mph SW	42 F	3		Partly cloudy, with a low around 43.

Tides

Incident Map/Sketch

20180502_ImpactedArea.jpg

Incident Map/Sketch

20180504_HotwarmzoneDrone Map.jpg

Incident Map/Sketch

20180502ProcoessingPlantDroneImage.jpg

Objective(s)
Ensure the Safety of the public and Response Personnel
Incident stabilization
Evidence Preservation
Minimize environmental impacts
Keep Stakeholders Informed of Response Activities
Monitor social and local media

Operational Period Command Emphasis (Safety Message, Priorities, Key Decisions/Directions)

Incident Action Plan Components			
x	IAP Cover Sheet	x	Weather Report
x	Map/Sketch	x	ICS 202 - Incident Objectives
x	ICS 202b - Critical Information Requirements	x	ICS 204 - Assignment List
x	ICS 205 - Radio Communications	x	ICS 205a - Communications List
x	ICS 206 - Medical Plan	x	ICS 207 - Organization Chart
x	ICS 208 - Site Safety Plan		

Incident Command Critical Threshold Reporting Criteria

- Injury or Death (OSHA/1st Aid or greater through Safety Officer)
- Significant change of status of site conditions
- Public health impacts
- Impacted sensitive areas beyond protection/Any change to trajectories
- Loss of major tactical resources
- Unplanned VIP visits en-route/planning/arriving
- Adverse protest plans or interview requests
- Adverse political/influence
- Loss or breach of containment
- Any breach in safety/investigation zone
- Special requests from agencies
- Any changes to respiratory requirements (eg: SCBA)
- Any evidence wildlife impact
- Any exceedance of an air monitoring action level

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Stabilization Group Supervisor	Thom, Tim	Husky Energy Inc.	715-817-8016	
Flare Purge Task Force Leader	Campbell, Adam	Husky Energy Inc.	218-491-4920	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Flare Purge Task Force	Manpower: Responder	Day Shift Responders	16	
Flare Purge Task Force	Miscellaneous	Nitrogen Bottles	43	
Flare Purge Task Force	Miscellaneous	TMVU	1	
Flare Purge Task Force	Vacuum Truck	Vacuum Truck	1	
Flare Purge Task Force	Manpower: Operator	Manpower: Operator	2	

Assignments

Continue efforts to identify flare mechanical integrity weaknesses. Including piping, knockout vessels and flare.

Verify VCU destruction efficiency of flaring method pending a finalize plan from Evergreen

Continue nitrogen purge of flare header. Pump out flare knockout vessels.

Remove asphalt in the vicinity of knockout pots

Prior to removal, WDNR trained contractor must identify the presence of asbestos

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

If in Hot Zone, follow Hot Zone entry procedures.

If in Warm or Cold Zone, refinery PPE must be worn.

Hazard assessment must be done to plan safe work.

Be cognizant of the hazards of the products in the Flare, as well as nitrogen, fire and similar hazards.

Emergency Alarm system will signal need to evacuate from the site.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Stabilization Group Supervisor	Thom, Tim	Husky Energy Inc.	715-817-8016	
De-Inventory Task Force Leader	Laszewski, Aaron	Husky Energy Inc.	920-883-1992	
De-Inventory Task Force Leader	Ivanca, Erin	Husky Energy Inc.	651-592-6339	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
De-Inventory Task Force	Manpower: Responder	Day Shift Responders	16	
De-Inventory Task Force	Manpower: Responder	Additional Contractors	5	

Assignments

Continue to assess current site conditions.

Blind the benzout sump to the flare.
Install 3" connection on vent piping to connect to VCU

Finalize the hydrocarbon de-inventory plan for:
- FCC area (Gascon, FCC, cat gas hydrotreater)
- Benzout area

Continue to develop de-inventory plan for:
- Crude area (Crude towers, hydrotreaters)

SRS/NRC/Evergreen to assist with plan development

Final approval of hydrocarbon de-inventory plan by the following:
- Incident Commander
- Operations Section Chief
- Planning Section Chief
- Safety Officer

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Once de-inventory events commence, notification of any venting/release of vapor/liquid hydrocarbon to the environment shall be made to the GHD air monitoring group immediately for consideration in air monitoring.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

If in Hot Zone, follow Hot Zone entry procedures.

If in Warm or Cold Zone, refinery PPE must be worn.

Hazard assessment must be done to plan safe work.

Be cognizant of the hazards of the hazards of Nitrogen, reactor contents, etc.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Stabilization Group Supervisor	Thom, Tim	Husky Energy Inc.	715-817-8016	
Reactor Task Force Leader	Witherill, Troy	Husky Energy Inc.	218-522-0114	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Reactor Task Force	Manpower: Responder	Day Shift Responders	3	
Reactor Task Force	Manpower: Responder	Night Shift Responders	2	
Reactor Task Force	Miscellaneous	Nitrogen Bottles	7	

Assignments

Maintain and document ongoing nitrogen purge. 24hr operations. Report any loss of nitrogen purge immediately to the Reactor Group Supervisor.

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

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Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

If in Hot Zone, follow Hot Zone entry procedures.

If in Warm or Cold Zone, refinery PPE must be worn.

Hazard assessment must be done to plan safe work.

Be cognizant of the hazards of the product in reactor as well as nitrogen, fire and similar hazards.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

Emergency Alarm system will signal need to evacuate from the site.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Stabilization Group Supervisor	Thom, Tim	Husky Energy Inc.	715-817-8016	
Chemical Removal Task Force Leader	McCusker, Brian	Husky Energy Inc.	218-348-9769	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Chemical Removal Task Force	Manpower: Responder	Day Shift Responders	3	

Assignments

Develop options and recomendation for HF acid management.

Four (4) options to be developed in parallel by HF Alkylation Consultants and SPSI in order to evaluate and mitigate risk:
1) Neutralize on-site
2) Transfer to an off-site facility
3) Retain on-site with safeguards in place
4) Other safe management alternatives

No operations until final approvals have been received

Ammonia Removal Plan to be developed by Wenck & NRC

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

All precautions should be taken to minimize release of any chemical to the environment. If chemical is released the environmental unit leader shall be notified immediately.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

If in Hot Zone, follow Hot Zone entry procedures.

Fixed HF air monitors do not currently work. Rely on personal HF monitors and area monitors for determination of HF within the air.

Determine that water cannons are operational. If not, stage water nozzles and verify antiquate coverage of water spray to mitigate a release.

If in Warm or Cold Zone, refinery PPE must be worn except where HF Akly Gear is required and that must be worn.

Hazard assessment must be done to plan safe work.

Be cognizant of the hazards of the hydrofluoric acid and other hazards of the Alkylation Unit.

Emergency Alarm system will signal need to evacuate from the site.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Mechanical Group Supervisor	Rikkola, Ken	Husky Energy Inc.	218-343-9538	
Energy Restoration Task Force Leader	Carlson, Brad	Husky Energy Inc.	218-390-5182	
Energy Restoration Task Force Leader	Massie, Nik	Husky Energy Inc.	715-817-1209	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Energy Restoration Task Force	Manpower: Responder	Manpower: Responder	4	

Assignments

Energize "H" Building - Contingent on approved plan (MOC)

Prepare MOC and temporary power plan to power sump pumps in benzout.

Continue to identify electrical opportunities and needs to restore normal operating capabilities to the facility.

Continue developing re-energizing plan including priority assets and identify electrical opportunities and needs to restore normal operating capabilities to the facility.

Plans to be approved through normal refinery MOC process and Operations Section Chief.

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Considerations of potential hydrocarbon release should be made prior to energizing hydrocarbon containing equipment or their control system in order to minimize the release of hydrocarbons.
Prior to energizing any CEM buildings all building analyzers and sampling equipment shall be turned off.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

If in Hot Zone, follow Hot Zone entry procedures discussed in previous section.

If in Warm or Cold Zone, refinery PPE must be worn.

Hazard assessment must be done to plan safe work.

Follow Refinery Electrical Safety and Lockout Tagout programs.

Be cognizant of downed power lines, overhead hazards and potential for unintentional energization of electrical equipment.

Wear PPE appropriate to the potential electrical energy.

Emergency Alarm system will signal need to evacuate from the site.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or a Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Mechanical Group Supervisor	Rikkola, Ken	Husky Energy Inc.	218-343-9538	
Waste Water Treatment Task Force Leader	Amato, Joe	Husky Energy Inc.	715-969-7724	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Waste Water Treatment Task Force	Manpower: Operator	WCS Operator	2	
Waste Water Treatment Task Force	Manpower: Operator	WWTP Operator	2	

Assignments

Flush waste water treatment plant system

Begin circulation to restore biological treatment activity

Special Environmental Considerations

All WWTP permit limits will need to be achieved prior to discharge of any water off-site.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

Hydrogen Sulfide may be higher than normal due to water not being processed.
Water on ground will make the work area slippery.
Potential for sludge cleanup. Wear refinery chemical gear.
Wear hearing protection in the nonoffice areas of WWTP.
Follow Husky Superior Electrical Safety SPI (procedure) for all electrical work.
Complete a PSR5 before staring up the plant

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Mechanical Group Supervisor	Rikkola, Ken	Husky Energy Inc.	218-343-9538	
Asset Stabilization Task Force Leader	Rikkola, Ken	Husky Energy Inc.	218-343-9538	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Asset Stabilization Task Force	Manpower: Responder	Day Shift Responders	16	
Asset Stabilization Task Force	Manpower: Responder	Engineer	1	
Asset Stabilization Task Force	Manpower: Responder	Additional Contractors	9	
Asset Stabilization Task Force	Manpower: Operator	Manpower: Operator	2	
Asset Stabilization Task Force	Equipment: Heavy	Telehandler	1	
Asset Stabilization Task Force	Front-end loader	Front-end loader	1	

Assignments

Primary asset of concern for asset stabilization: Stripper tower (15G-V10)

Actions:
- Operations to define process lines.
- Baker Risk to clear area
- Determine travel paths
- Baker Risk to observe the asphalt clearing process
- Clear the asphalt up to the adler frac tank

Speciality contractors Brandenburg Demolition & Barnhart Crane & Rigging are mobilizing to site to finalize the Lifting and stabilization plan of Stripper Tower (15G-V10)

Final approval of Lifting and stabilization plan by the following:
- Incident Commander
- Operations Section Chief
- Planning Section Chief
- Safety Officer

Continue identifying other assets of concern.

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Once stabilization events commence, notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly. Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

All contractors must be preapproved by Refinery Safety Department.

If in Hot Zone, follow Hot Zone entry procedures discussed in previous section.

If in Warm or Cold Zone, refinery PPE must be worn.

Hazard assessment must be done to plan safe work.

Be cognizant of the hazards of the product in the vessel, fire and similar hazards.

Emergency Alarm system will signal need to evacuate from the site.

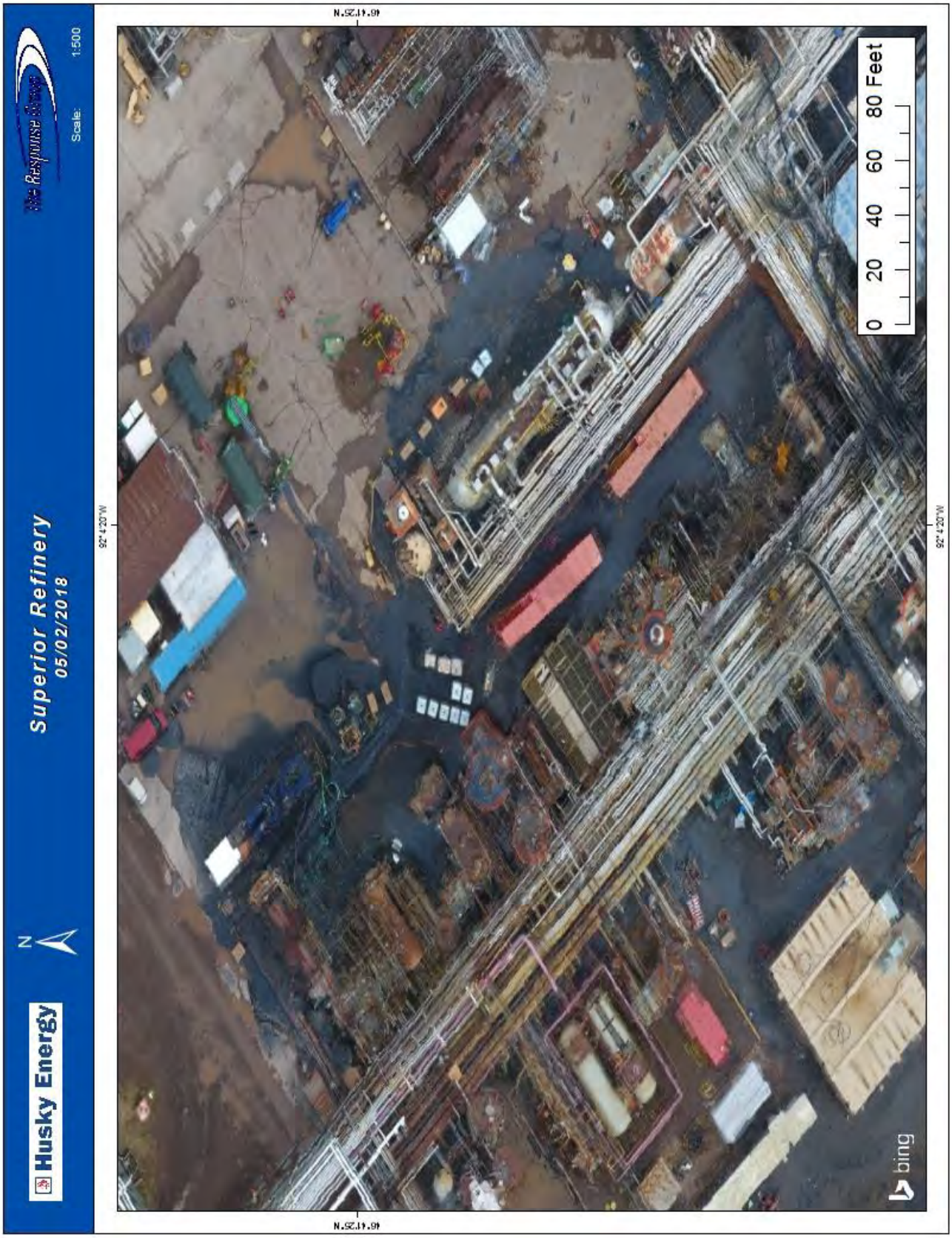
Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request ligth plants and other larger lighting.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

20180502_MapforCranezoomed.jpg



Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Emergency Response Group Supervisor	Quimby, Jerome	Husky Energy Inc.	218-428-5190	
ERT Task Force Leader	Hunker, Johnny	Husky Energy Inc.		
ERT Task Force Leader	VanHornweder, Brian	Husky Energy Inc.	218-428-5210	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
ERT Task Force	Fire Fighting Foam	Fire Fighting Foam	1500	
ERT Task Force	Tanker Truck	Tanker Truck	1	
ERT Task Force	Foam pumper	Foam pumper	1	
ERT Task Force	Manpower: Responder	Manpower: Responder	35	

Assignments

Maintain 24hr readiness to respond to any incidents on-site. Follow guidelines as defined in existing Superior Refinery Emergency Response Plan.

Escort all approved individuals into the hot zone area as needed. All approvals to go through Maintenance Supervision.

See attached map for warm and hot zone locations.

Equipment manager for ERT will ensure serviceability and organization of ERT building and equipment

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

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Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

If in Hot Zone, follow Hot Zone entry procedures discussed in previous section.

If in Warm or Cold Zone, refinery PPE must be worn.

Emergency Alarm system will signal need to evacuate from the site.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin licensed asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Emergency Response Group Supervisor	Quimby, Jerome	Husky Energy Inc.	218-428-5190	
Fire Pump Task Force Leader	Peterson, John	Husky Energy Inc.	218-428-6160	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Fire Pump Task Force	Manpower: Responder	Manpower: Responder	4	
Fire Pump Task Force	Pumps	Fire Pumps	4	

Assignments

Maintain operational readiness of fire water pumps. Report any issues to the Emergency Response Group Supervisor.

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Release of diesel fuel at the diesel fire water pumps shall be properly cleaned up immediately for proper disposal.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

Refinery require FR clothing, Hard Hat, Safety Glasses and safety boots.

If in Diesel Pump building and pumps are running, hearing protection must be worn.

If working along the pond perimeter, a life jacket must be worn.

Emergency Alarm system will signal need to evacuate from the site.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Emergency Response Group Supervisor	Quimby, Jerome	Husky Energy Inc.	218-428-5190	
Security Task Force Supervisor	Conrad, Curt	Manpower		

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Security Task Force	Manpower: Responder	Securitas Security Officer	18	
Security Task Force	Vehicle	Security Vehicle	4	

Assignments

Securitas to maintain 24hr security checkpoints at road blocks, command post and control sites. Roving security to patrol between sites and to additional locations as requested.

Security to reference list of (Non-Husky) individuals approved for access.

Sites:
- Road block at Stinson/Hill
- Road block at Stinson/Bardon
- Hill/Stinson Guard Shack

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Immediate notification of a breach in the security of the site should be reported through the ICS system to mitigate the potential for a release of hydrocarbon to the environment.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

Any work on roadways requires a high visibility vest.

Be cognizant of vehicle traffic.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

Keep truck flashing lights on if manning roadblocks.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Environmental Monitoring Group Supervisor	Beattie, Dave	Husky Energy Inc.	218-348-9051	
Air Monitoring Task Force Leader	Armes, Will	GHD	519-497-8054	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Air Monitoring Task Force	Equipment: Air Monitoring	AreaRaes	32	
Air Monitoring Task Force	Equipment: Air Monitoring	MultiRaes	10	
Air Monitoring Task Force	Equipment: Air Monitoring	UltraRaes	10	
Air Monitoring Task Force	Equipment: Air Monitoring	Dust Track	10	
Air Monitoring Task Force	Manpower: Operator	Air Monitoring Supervisors	2	
Air Monitoring Task Force	Manpower: Responder	Industrial Hygienist	25	

Assignments

1. Continue to maintain a fixed perimeter air monitoring system that has been deployed to the area currently delineated as the hot zone. This monitoring will be conducted in accordance with the Site action levels described in the Air Monitoring Plan

2. Continue to maintain a fixed perimeter air monitoring system that has deployed to the perimeter of the refinery process area at or near the fenceline. This monitoring will be used to provide information regarding air quality in close proximity to potential sources of emissions of COI during the cleanup and recovery phases of the project.

3. Mobile community monitoring teams will continue to conduct monitoring in the area outside the facility, with a focus on downwind monitoring, while the cleanup and recovery phases of the project are ongoing.

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

If in Hot Zone, must follow Hot Zone Procedures including Bunker Gear, ERT escort, 4-Gas Monitor and sign in at ERT Response Center.

All other areas in the refinery require FR clothing, Hard Hat, Safety Glasses and safety boots.

If working along the perimeter fence or other Husky property outside of refinery, contact security guards at 715-398-8220 to make them aware of your presence. Otherwise, the police will be called.

When working along the refinery perimeter, be cognizant of slip, trip and fall hazards.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

Emergency Alarm system will signal need to evacuate from the site.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

20180504_AirMonitoring Stations.jpg

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Environmental Monitoring Group Supervisor	Beattie, Dave	Husky Energy Inc.	218-348-9051	
Water Sampling Task Force Leader	Turner, Matt	Husky Energy Inc.	715-969-4873	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Water Sampling Task Force	Miscellaneous	Long-Handled Surface water Sampler	4	
Water Sampling Task Force	Miscellaneous	Lab Sample Containers	24	
Water Sampling Task Force	Miscellaneous	Water-Proof Shipping Containers	4	
Water Sampling Task Force	Manpower: Responder	Water Sampling Techs	3	

Assignments

1. Continue to collect water samples at designated sites utilizing appropiate water sampling equipment and techniques.

2. Package and arrange water samples for delivery to selected labs for analysis.

3. Report findings to EUL and appropiate govenment environmental agencies.

4. Seven (7) sample sites determined in Newton Creek. Two (2) sample sites within refinery (Pond 2, 3, 4)

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Follow existing water sampling plan developed by GHD and approved by applicable agencies. All precautions should be taken to ensure proper sampling.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

Please refer to GHD Health and Safety Plan for water sampling.

Emergency Alarm system will signal need to evacuate from the site.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warrented, request ligth plants and other larger lighting.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

20180430_watersamplingsites_NoDate.jpg

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Environmental Monitoring Group Supervisor	Beattie, Dave	Husky Energy Inc.	218-348-9051	
IH Monitoring Task Force Supervisor	Thiel, Jason	Husky Energy Inc.	419-296-6310	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
IH Monitoring Task Force	Manpower: Responder	Industrial Hygienist	2	
IH Monitoring Task Force	Pumps	Sampling Pumps	5	
IH Monitoring Task Force	Manpower: Responder	Asbestos Contractors	12	

Assignments

Continue asbestos monitoring on-site as directed by approved Asbestos Plan

Personal monitoring for air contaminants. (VOC, Asbestos)

Continue picking up insulation outside of the fence line and in the asphalt truck loading areas.

Provide asbestos hazard support to ERT and on-site operations within the hot zone or other areas where insulation is damaged.

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Debris shall be assumed to be asbestos containing unless testing or other means of identification confirms otherwise.Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

If in Hot Zone, must follow Hot Zone Procedures including Bunker Gear, ERT escort, 4-Gas Monitor and sign in at ERT Response Center.

All other areas in the refinery require FR clothing, Hard Hat, Safety Glasses and safety boots.

If working along the perimeter fence or other Husky property outside of refinery, contact security guards at 715-398-8220 to make them aware of your presence. Otherwise, the police will be called.

When in the refinery, be cognizant of hazards associated with a fire zone.

When working along the refinery perimeter, be cognizant of slip, trip and fall hazards.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

Emergency Alarm system will signal need to evacuate from the site.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Environmental Monitoring Group Supervisor	Beattie, Dave	Husky Energy Inc.	218-348-9051	
Environmental Support Task Force Leader	Turner, Matt	Husky Energy Inc.	715-969-4873	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Environmental Support Task Force	Manpower: Responder	Manpower: Responder	3	
Environmental Support Task Force	Boom	Boom	400	
Environmental Support Task Force	Sorbent: Boom	Sorbent: Boom	400	
Environmental Support Task Force	Vehicle	Vehicle	4	
Environmental Support Task Force	Vacuum Truck	Vacuum Truck	1	
Environmental Support Task Force	Manpower: Operator	Vac Truck Operators	2	
Environmental Support Task Force	Manpower: Operator	Operator	1	
Environmental Support Task Force	Excavator	Mini Excavator	1	

Assignments

Boom Maintenance:
The team will travel to the current boom sites along Newton Creek to assess the condition of the boom. The morning crew will replace all absorbent boom that appears to have petroleum contamination. Any containment boom that is compromised will be put into 55 gallon steel drums that are labeled with a non-hazardous waste label filled in with "Oily Absorbent Booms". Full drums will be brought to the 90 day storage building. Pictures of each boom site should be taken both before and after any upkeep for documentation. Report to acting shift foreman for any additional work he may have for them.

Escort Surface Water Sampling teams:
The team will provide escort inside the facility to ponds 2,3 & 4 to conduct surface water samples.

Respond to any immediate actions, environmental concerns. (ie: Cleanup of contaminants at boom locations, address contamination issues at stinson avenue, conduct visual assessments of Nemadji River) as directed by Matt Turner.

Using vac trucks, de-water then assess the culverts underneath Stinson Ave. for structural integrity and potential contamination.

Communications

Name / Function	Contact Details
Primary	1
Secondary	2
Radio	3 to 7
ERT Channel	8
Channel 1 Talk Around	11
Channel 2 Talk Around	12

Special Equipment / Supplies Needed for Assignment

Steel Drums, wheelbarrow

Special Environmental Considerations

Presence of sheen/oil at any location shall be relayed to the boom maintenance task force leaderActions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

Be aware of slipping hazards on sides of banks of creek and other areas.

When work involves roadways, utilize Hi Viz vest.

Wear a life jacket when working in areas of deeper water. Consider slipping hazards and what might happen if you were to slip into creek while deploying boom.

Utilize proper lifting techniques and utilize mechanical lifting techniques on heavy boom or other objects.

Inspect for ticks when traveling in grassy or wooded areas.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Environmental Monitoring Group Supervisor	Beattie, Dave	Husky Energy Inc.	218-348-9051	
Oil Recovery Task Force Leader	Turner, Matt	Husky Energy Inc.	715-969-4873	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Oil Recovery Task Force	Frac Tank	Frac Tank	2	
Oil Recovery Task Force	Vacuum Truck	Vacuum Truck	1	
Oil Recovery Task Force	Manpower: Operator	Vac Truck Operators	2	

Assignments

Proceed with recovery of oil within containment area of tank 54 and adjacent containments using vac trucks and steam coiled frac tanks.

Maintain wildlife fencing around Tank 54.

Special Environmental Considerations

Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

Hydrogen Sulfide gas may be present. Pay attention to H2S air monitors and evacuate if exposure is 10 PPM or greater.

Verify that prior product held is compatible with 6 Oil, Therminol, or any other product that might be found in the diked area.

Avoid potential creation of static electricity by provide grounding and/or bonding as necessary.

Be cognizant of slip, trip and fall hazards.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Environmental Monitoring Group Supervisor	Beattie, Dave	Husky Energy Inc.	218-348-9051	
Wildlife Task Force Leader	McLeish, Torey	Husky Energy Inc.	403-828-3418	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Wildlife Task Force	Manpower: Responder	Manpower: Responder	4	
Wildlife Task Force	Vacuum Truck	Vacuum Truck	1	
Wildlife Task Force	Manpower: Operator	Vac Truck Operators	2	
Wildlife Task Force	Small Boat	Small Boat	1	
Wildlife Task Force	Boat Operator	Boat Operator	2	
Wildlife Task Force	Skimmer	Skimmer	1	

Assignments

Minimize access to asphalt tank farm by installing fencing (chain link & silt fence), penant & mylar flagging around all of the asphalt and 6 oil containment area.

Remove all impacted cat tails around the edge of the impoundment area.

Contingent on approval from CSB & OSHA:
Begin applying sand to the asphalt and 6 oil release areas to separate released materials from contact with wildlife.

All operations should be in accordance with the approved Wildlife Plan.

Special Equipment / Supplies Needed for Assignment

100yd sand
Pre-sectioned mobile fencing
PFD
Flagging material

Special Site-Specific Safety Considerations

Wear Refinery PPE including FR clothing, Hard Hat, Safety Glasses and safety boots.

If working along the permiter fence or other Husky property outside of refinery, contact security guards at 715-398-8220 to make them aware of your presence. Otherwise, the police will be called.

When working along the refinery perimeter, be cognizant of slip, trip and fall hazards.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

Emergency Alarm system will signal need to evacuate from the site.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Environmental Monitoring Group Supervisor	Beattie, Dave	Husky Energy Inc.	218-348-9051	
Waste Management Task Force Leader	Turner, Matt	Husky Energy Inc.	715-969-4873	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Waste Management Task Force	Dump Truck	Dump Truck	5	
Waste Management Task Force	Manpower: Responder	Spotter	1	
Waste Management Task Force	Manpower: Operator	Operator	1	
Waste Management Task Force	Front-end loader	Front-end loader	1	

Assignments

Contingent on Baker Risk clearance:

Dispose of asphalt removed by the Asset Stabilization Task Force.

Movement of disposal equipment should be directed by Asset Stabilization Task Force Leader

All operations to follow the approved Asbestos and Waste Management Plans

Special Site-Specific Safety Considerations

If in Hot Zone, follow Hot Zone entry procedures.

If in Warm or Cold Zone, refinery PPE must be worn.

Hazard assessment must be done to plan safe work.

Be cognizant of the hazards of the product in reactor as well as nitrogen, fire and similar hazards.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

Emergency Alarm system will signal need to evacuate from the site.

For work in the hot zone or where damage has occurred to equipment, area must be assessed for asbestos and other hazardous materials by an Industrial Hygienist or Wisconsin Licensed Asbestos personnel prior to their work. Safe work permit request must include request for this determination. Any concerns found as part of this assessment must be addressed prior to any work being done.

Operations Personnel

Position	Name	Affiliation	Contact Number(s)	Work Shift
Operations Section Chief	Fredman, Peter	Husky Energy Inc.	320-288-6161	
Deputy Operations Section Chief	Schade, Kollin	Husky Energy Inc.	317-292-6594	
Decon Group Supervisor	Raiha, John	Husky Energy Inc.	218-390-4078	

Resources Required

Area Of Operation	Resource Kind	Description	Quantity	Size
Decon Group	Manpower: Responder	Decon Personnel	4	
Decon Group	Equipment: Decon	Decon Station	1	

Assignments

Conduct personnel decon as per standard procedure outlined in Refinery ERP.

Communications

Name / Function	Contact Details
ERT Channel	8
Channel 1 Talk Around	11
Primary	1
Secondary	2
Radio	3 to 7

Special Environmental Considerations

Actions shall be taken to minimize any release of hydrocarbons to the environment. Any liquid hydrocarbon release shall be cleaned up immediately and disposed of properly.
Notification of any venting/release of vapor/liquid hydrocarbon shall be made to the GHD air monitoring group immediately for consideration in air monitoring. Any liquid hydrocarbon release shall be cleaned up immediately.

Special Site-Specific Safety Considerations

Decon personnel must wear chemical gear over FR coveralls.

Use flashlights, vehicle lights and other lighting during nighttime activities. If warranted, request light plants and other larger lighting.

Four station boot Decon:
1. Simple Green and/or Orange Peel used to decon at Wash Station #1
2. Water rinse at station #2
3. Water rinse at station #3
4. Clean water tub at station #4

Additional Information

If impacted wildlife are observed. Do not approach or attempt to capture. Please contact Husky Hill Avenue guard shack at 715-398-8220 or 221

Radio Channel Information

Ch #	*Function*	*Channel Name/ Trunked Radio System Talkgroup*	*Assignment*	*Rx Freq N or W*	*Rx Tone/NAC*	*Tx Freq N or W*	*Tx Tone/NAC*	*Mode (A, D, or M)*	*Remarks*
1	Primary	Primary Radio Channel - Repeated							
2	Secondary	Secondary Radio Channel - Repeated							Secondary Repeated Channel Unit and Use s
3 to 7	Radio	Radio to Radio Channels							Working Channel
8	ERT Channel	Emergency Response Channel							Emergency Response Team Channel
11	Channel 1 Talk Around	Channel 1 Talk Around							Use this channel in case of failure of repeated Channel 1
12	Channel 2 Talk Around	Channel 2 Talk Around							Use this channel in case of failure of repeated Channel 2

Special Radio Instructions

Local Communications Information

Name	***Incident Assigned Position***	***Mobile Phone***	***Work Phone***	***Email***	***Notes***
Goedde, Ed	Incident Commander	Non-Responsive		ed.goedde@huskyenergy.com	
Logsdon, Paul	Deputy Incident Commander	[redacted]		paul.logsdon@huskyenergy.com	
Morrison, Dave (EPA)	Agency Representative	[redacted]		morrison.david@epa.gov	
Syphard, Dan	Legal Officer	[redacted]		dan.syphard@huskyenergy.com	
Obery, John	Liaison Officer	[redacted]		john.obery@huskyenergy.com	
O'Brien, John	Safety Officer	[redacted]		john.obrien@huskyenergy.com	
Bachhuber, Julie	HR Officer	[redacted]		julie.bachhuber@huskyenergy.com	
Yuill, Carla	Public Information Officer	[redacted]		carla.yuill@huskyenergy.com	
Williams, Blake	ICS Process Advisor	[redacted]		blake.williams@huskyenergy.com	
Fredman, Peter	Operations Section Chief	[redacted]		peter.fredman@huskyenergy.com	
Schade, Kollin	Deputy Operations Section Chief	[redacted]		kollin.schade@huskyenergy.com	
Tokarz, Christina	Planning Section Chief	[redacted]		Christina.Tokarz@huskyenergy.com	
Harris, Paul	Deputy Planning Section Chief	[redacted]		Paul.Harris@huskyenergy.com	
Choate, Jerry	Logistics Section Chief	[redacted]		jerry.choate@huskyenergy.com	
Drach, Len	Deputy Logistics Section Chief	[redacted]	306-821-2689	Len.Drach@huskyenergy.com	
Bruckelmyer, Jason	Support Branch Director	[redacted]		jason.bruckelmyer@huskyenergy.com	
Black, Jason	Supply Unit Leader	[redacted]		jason.black@huskyenergy.com	
Kowitz, Kim	Finance Section Chief	[redacted]		kim.kowitz@huskyenergy.com	
Verrill, John	Deputy Finance Section Chief	[redacted]		john.verrill@huskyenergy.com	
Harris, Paul	Situation Unit Leader	[redacted]	306 820-8250	Paul.Harris@huskyenergy.com	
Buckley, Joe	Resource Unit Leader	[redacted]		jbuckley@responsegroupinc.com	
Roden, Mary Kay	Documentation Unit Leader	[redacted]		mary.roden@huskyenergy.com	
Darby, Mark	Environmental Unit Leader	[redacted]		mark.darby@huskyenergy.com	
Shook, Anthony	GIS Specialist	[redacted]		AShook@responsegroupinc.com	

Medical Aid Stations

Name	*Location*	*Paramedic On Site*	*Phone*	*Radio*
Superior Refinery Medical Aid Station	-92.07578 46.68889	x		

Transportation (Ground and/or Air Ambulance Services)

Ambulance Service	*Location*	*Phone*	*Radio*	*Air*	*ALS*
Global Air Ambulance	3500 Tower Ave. Superior, WI 54888 -92.07202 46.68952	Ph1: (305) 514-0942		x	
Gold Cross Ambulance Service	4505 W. Michigan St. Duluth, MN -92.15475 46.74444	Ph1: (218) 628-9323			

Hospitals

Hospital	*Location*	*Phone*	*Radio*	*Air Travel Time*	*Ground Travel Time*	*Trauma Center*	*Helipad*	*Burn Center*
Essentia Health St. Mary's Hospital	3500 Tower Ave Superior, MN -92.10236 46.69748	Ph1: (715) 817 -7000		min	15 min	II	x	
Essentia Health Duluth (Miller Dwan) Thermal or Chemical Burns	502 E 2nd St Duluth, MN -92.09367 46.79244	Ph1: (218) 727-8762		min	30 min	II		x
St Luke's Duluth	915 East First Street Duluth, MN -92.08762 46.79718	Ph1: (218) 249-5555		min	30 min	II	x	
				min	min			

Special Medical Emergency Procedures

All injured employees who require more than in-house first aid, (i.e. lacerations requiring stitches, severe eye problems, severe strains/sprains or fractures) will be sent to the following medical facility:
Essentia St. Mary's Occupational Medicine Clinic
3500 Tower Ave
Superior, WI
(715) 817-7100

INJURIES INVOLVING EXPOSURE TO HYDROFLUORIC ACID
For minor exposures, the employee may be transported to Essentia St. Mary's Emergency Room in Superior, the Essentia Duluth Clinic Occupational Medicine Clinic or the Essentia St. Mary's Hospital Emergency Room in Duluth.
For all but minor exposures, the employee should be transported by ambulance to:
St. Mary's Hospital Emergency Room in Duluth:
407 East 3rd Street
Duluth. MN
218-786-4000

INJURIES INVOLVING THERMAL OR CHEMICAL BURNS
For injuries involving all but minor thermal or chemical burns, employees should be transported by ambulance to:
Essentia Miller-Dwan Burn Center 502 E. Second St., First Floor
Duluth, MN
(218) 786-2815

MEDICAL SERVICES/EMPLOYEE MEDICAL RECORDS/ WORKER'S COMPENSATION

SCOPE

This Standard Practice Instructions is to be considered Husky Superior company policy and minimum acceptable standards under normal conditions. Stricter requirements may apply under certain situations. If a problem is encountered, consultation with a safety professional should be considered before proceeding. Keep in mind that any alternative procedure must be at least as effective as these instructions in providing a safe workplace.

RATIONALE

This procedure was developed to inform all supervisors of the steps which need to be taken to insure that all injured employees are properly cared for, to explain access to employee medical records, and to explain the worker's compensation procedure.

APPLICATION

This policy describes the procedure that needs to be followed by all Husky Superior employees when it is necessary to obtain medical services, access medical records, or receive worker's compensation.

DEFINITIONS

Minor injury – Any injury that can be properly attended with in-house first aid. This type of injury might include strains/sprains, lacerations not requiring stitches, irrigating eyes or minor burns (either chemical or thermal).

Medical First-Aid Injuries – Any injury that can be properly attended by a physician with first-aid treatment.

Serious Injury – An injury that resulted in an OSHA recordable injury, lost-time injury (either lost workdays or restricted workdays) or fatality.

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PROCEDURE FOR OBTAINING MEDICAL SERVICES

Note: On-Shift Emergency Response Team (ERT) Members should be called to assist on all, but very minor, medical incidents.

DAYTIME HOURS, MONDAY THROUGH FRIDAY

All injured employees who require more than in-house first aid, (i.e. lacerations requiring stitches, severe eye problems, severe strains/sprains or fractures) will be sent to the following medical facility:

Essentia SMDC Occupational Medicine Clinic
Duluth Clinic 3rd Street Building
400 E. Third St.
Duluth, MN
(218) 786-3392

-or-

Essentia St. Mary's Occupational Medicine Clinic
3500 Tower Ave
Superior, WI
(715) 817-7100

A. The immediate supervisor shall contact the Safety Department and advise of the injured employee.

B. The Safety Manager or other member of the Safety Department will notify Essentia that an employee of Husky Superior is in route and give them a brief description of the employee's condition.

   a. If requested by the Employee's Supervisor, the medical facility will also be advised that a drug screen and breath alcohol test according to the Husky Superior Drug and Alcohol Program will be needed.

C. The Safety Manager, other member of the Safety Department or the Shift Foreman/Employee's Supervisor should accompany the injured employee to the medical facility to assure prompt and immediate medical attention is obtained. The medical facility will direct proper medical attention/treatment.

EVENINGS, WEEKENDS, HOLIDAYS

If an employee is injured Monday through Friday, after 5:00 PM, on a Saturday, Sunday, or holiday, the shift supervisor will follow these guidelines.

Minor Injuries

All injured employees who require more than in-house first aid, (i.e. lacerations requiring stitches, severe eye problems, severe strains/sprains or fractures) will be sent to the following medical facility:

Essentia St. Mary's Emergency Room
3500 Tower Ave
Superior, WI 54880
Phone: (715) 817-7100

Serious Injury

Some injuries may be such that immediate outside medical attention is required. If it has been determined that the injury is not life threatening but will require outside medical attention, the injured employee should be transported either by company vehicle or by ambulance. Unless directed by ambulance or other emergency responders, the employee should be transported to the Emergency Room at Essentia St. Mary's Superior or Duluth.

A. The immediate supervisor shall contact the Safety Department and advise of the injured employee.

B. The Supervisor or the Safety Manager will notify Essentia that an employee of Husky Superior is in route and give them a brief description of the employee's condition.

   a. If requested by the Employee's Supervisor, the medical facility will also be advised that a drug screen and breath alcohol test according to the Husky Superior Drug and Alcohol Program will be needed.

C. The Shift Foreman/Employee's Supervisor, Safety Manager/Safety Department Member or other Husky Superior Employee should accompany the injured employee to the medical facility to assure prompt and immediate medical attention is obtained. The medical facility will direct proper medical attention/treatment.

LIFE THREATENING EMERGENCIES

If the injury is life threatening, the injured employee will be transported to the hospital by ambulance. An injured employee under these conditions will not be transported by a Husky Superior or contractor employee. The supervisor in charge shall call or designate someone to call 911.

Examples of Life Threatening Situations

a. Employee is unconscious

b. Severe bleeding

c. Cyanosis (blue lips, fingernails)

d. Severe head injury

e. Severe chest pain, pain radiating down arms

f. Compound fractures (bones exposed)

g. Immediate excessive swelling

h. Hypothermia

i. Heatstroke

j. Stroke

Information for Operator at 911

a. Give a brief description of the problem. This will enable EMT's to prepare the equipment necessary for the immediate care of the injured employee.

b. Give direction to the appropriate gate nearest the accident; advise that there will be someone at the gate to escort the emergency vehicle to the site of the accident.

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After the 911 call, contact the following:

a. Call security and advise them of the pending arrival of the emergency vehicle.

b. Call the Essentia Medical facility that the employee was transported too and advise them that an employee of Husky Superior is in route and give them a brief description of the employee's condition and require a post accident drug/alcohol screen.

c. Notify either the Safety Manager, on-call personnel (weekends/holidays), or any available member of management.

INJURIES INVOLVING EXPOSURE TO HYDROFLUORIC ACID

For minor exposures, the employee may be transported to Essentia St. Mary's Emergency Room in Superior, the Essentia Duluth Clinic Occupational Medicine Clinic or the Essentia St. Mary's Hospital Emergency Room in Duluth.

For all but minor exposures, the employee should be transported by ambulance to:

St. Mary's Hospital Emergency Room in Duluth:
407 East 3rd Street
Duluth. MN
218-786-4000

Follow notification and other procedures as outlined above depending on the time of day that the exposure occurs.

INJURIES INVOLVING THERMAL OR CHEMICAL BURNS

For injuries involving all but minor thermal or chemical burns, employees should be transported by ambulance to:

Essentia Miller-Dwan Burn Center
502 E. Second St., First Floor
Duluth, MN
(218) 786-2815

Follow notification and other procedures as outlined above depending on the time of day that the exposure occurs.

SUPERVISOR'S INCIDENT/INJURY REPORT

The immediate supervisor shall complete the Supervisor's Incident/Injury Report form as soon as possible after the occurrence, but no later than the end of the shift on which it occurred.

NOTE: Husky Superior is required to notify OSHA within 8-hours of any incident that results in a fatality or the hospitalization of three or more employees. This notification will result in an OSHA investigation of the incident.

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ACCESS TO RECORDS

The following records shall be made available, upon request, to any employee and to their representatives for examination and copying at a reasonable time and manner:

a. OSHA 300 log;

b. Work Comp First Report of Injury;

c. OSHA 300A Annual Summary of occupational injuries and illnesses;

d. Pulmonary function and audiometric testing.

e. Industrial hygiene sampling records.

Medical records are kept in a confidential file, separate from the personnel file in the general administrative office. These files include the pre-placement physical record and worker's compensation information. Audio and pulmonary medical records are maintained in a separate file in the Safety Department. Employees may inspect their medical records by contacting the Supervisor of Administrative Services.

WORKER'S COMPENSATION

An employee involved in a personal injury has the responsibility to perform the following steps:

1. Receive medical attention if needed.
2. Report injury to supervision immediately!
3. Complete all appropriate forms with supervision.

   NOTE: These forms must be completed as soon as possible after the occurrence, but no later than at the end of the shift on which it occurred.

4. Participate in all investigations as necessary.

If an employee has an injury or illness that has not been reported as an accident but the employee believes it is work related, the employee must inform the company of the circumstance of the injury or illness and how it relates to the work place.

When the employee gives notice of an injury, the employee may see a physician of his/her choice. However, Husky Superior reserves the right to send the employee to another doctor for a second opinion at its discretion. In emergencies, Husky Superior may choose the practitioner without offering a choice, but after the emergency, the employee still has the option of seeing his/her own physician. The employee also may change practitioners once, with notice to Husky Superior.

The employee must provide Husky Superior with a doctor's report that provides evidence that the illness/injury is related to the employee workplace.

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Clinic/Hospital Information

Minor Injuries - Daytime Hours, Monday through Friday (either):

Essentia SMDC Occupational Medicine Clinic
Duluth Clinic 3rd Street Building
400 E. Third St.
Duluth, MN
(218) 786-3392

Essentia St. Mary's Occupational Medicine Clinic
3500 Tower Ave
Superior, WI
(715) 817-7100

Minor Injuries - Evenings, Weekends or Holidays:

Essentia St. Mary's ER - Superior
3500 Tower Ave
Superior, WI 54880
(715) 817-7100

Serious Injuries

Unless directed by ambulance or other emergency responders, the employee should be transported to either:

Essentia St. Mary's ER - Superior
3500 Tower Ave
Superior, WI 54880
(715) 817-7100

Essential St. Mary's Hospital ER - Duluth:
407 East 3rd Street
Duluth. MN
218-786-4000

HF Minor Exposures (any of the following):

Essentia St. Mary's ER - Superior
3500 Tower Ave
Superior, WI 54880
(715) 817-7100

Essentia Occup. Medicine Clinic
Duluth Clinic - 3rd Street Building
400 E. Third St.
Duluth, MN
(218) 786-3392

Essential St. Mary's ER - Duluth:
407 East 3rd Street
Duluth. MN
218-786-4000

HF Serious Exposures:

Essential St. Mary's Hospital ER - Duluth:
407 East 3rd Street
Duluth. MN
218-786-4000

Serious Thermal or Chemical Burns

Essentia Miller-Dwan Burn Center
502 E. Second Street, First Floor
Duluth, MN
(218) 786-2815

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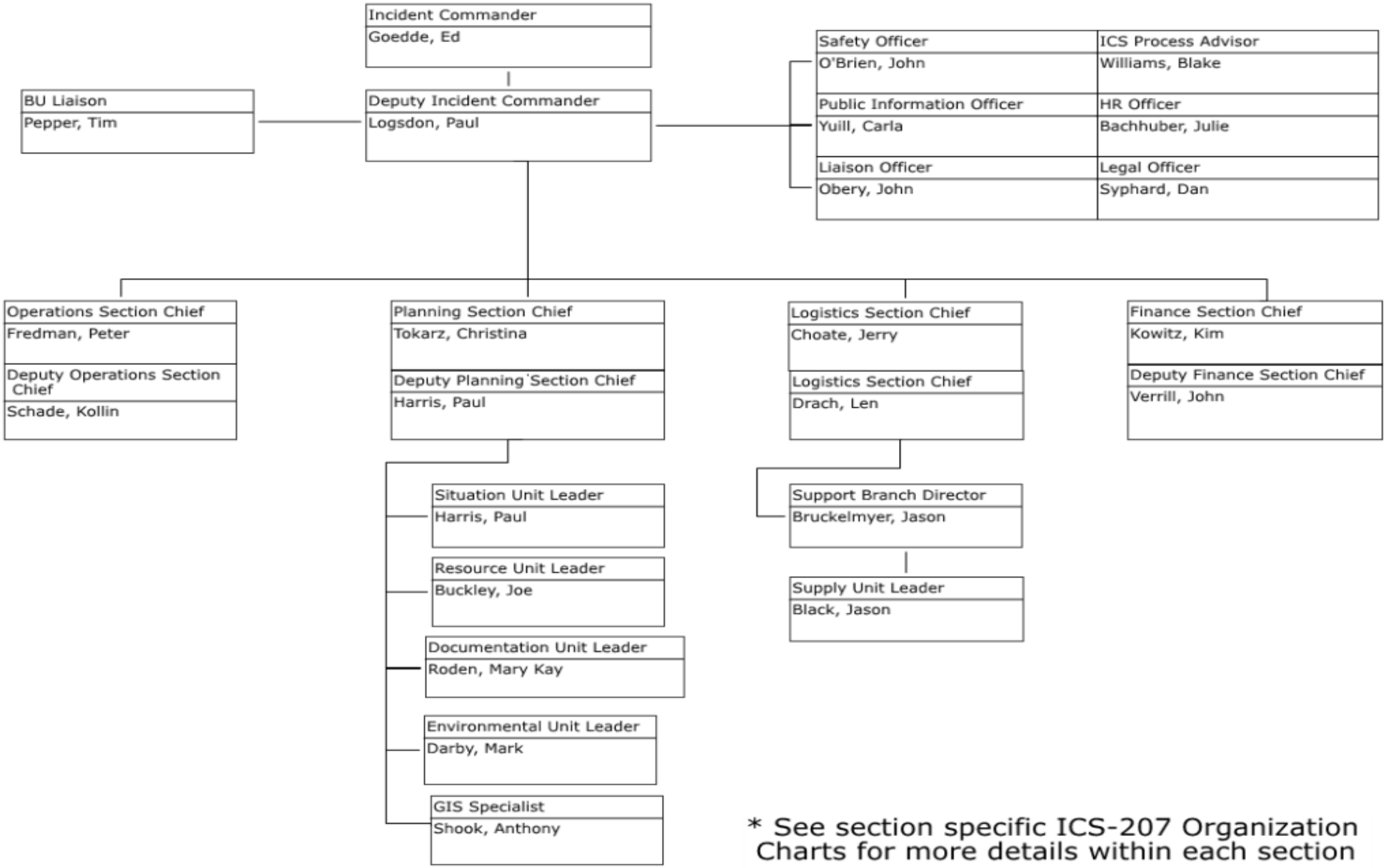
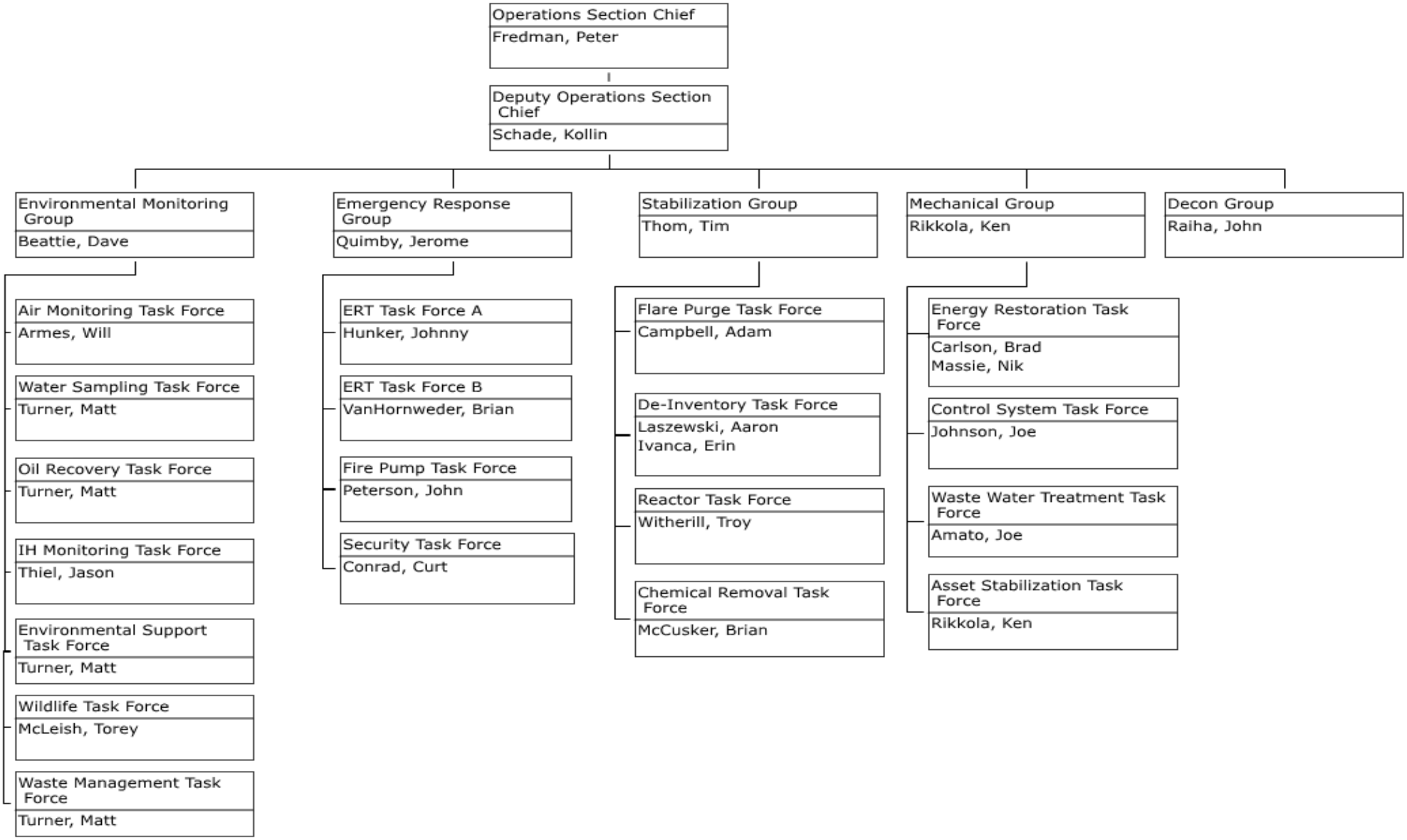

Incident Commander
Goedde, Ed
BU Liaison
Pepper, Tim
Deputy Incident Commander
Logsdon, Paul
Safety Officer
O'Brien, John
ICS Process Advisor
Williams, Blake
Public Information Officer
Yuill, Carla
HR Officer
Bachhuber, Julie
Liaison Officer
Obery, John
Legal Officer
Syphard, Dan
Operations Section Chief
Fredman, Peter
Deputy Operations Section Chief
Schade, Kollin
Planning Section Chief
Tokarz, Christina
Deputy Planning Section Chief
Harris, Paul
Logistics Section Chief
Choate, Jerry
Logistics Section Chief
Drach, Len
Finance Section Chief
Kowitz, Kim
Deputy Finance Section Chief
Verrill, John
Situation Unit Leader
Harris, Paul
Resource Unit Leader
Buckley, Joe
Documentation Unit Leader
Roden, Mary Kay
Environmental Unit Leader
Darby, Mark
GIS Specialist
Shook, Anthony
Support Branch Director
Bruckelmyer, Jason
Supply Unit Leader
Black, Jason
* See section specific ICS-207 Organization Charts for more details within each section


Operations Section Chief
Fredman, Peter
Deputy Operations Section Chief
Schade, Kollin
Environmental Monitoring Group
Beattie, Dave
Air Monitoring Task Force
Armes, Will
Water Sampling Task Force
Turner, Matt
Oil Recovery Task Force
Turner, Matt
IH Monitoring Task Force
Thiel, Jason
Environmental Support Task Force
Turner, Matt
Wildlife Task Force
McLeish, Torey
Waste Management Task Force
Turner, Matt
Emergency Response Group
Quimby, Jerome
ERT Task Force A
Hunker, Johnny
ERT Task Force B
VanHornweder, Brian
Fire Pump Task Force
Peterson, John
Security Task Force
Conrad, Curt
Stabilization Group
Thom, Tim
Flare Purge Task Force
Campbell, Adam
De-Inventory Task Force
Laszewski, Aaron
Ivanca, Erin
Reactor Task Force
Witherill, Troy
Chemical Removal Task Force
McCusker, Brian
Mechanical Group
Rikkola, Ken
Energy Restoration Task Force
Carlson, Brad
Massie, Nik
Control System Task Force
Johnson, Joe
Waste Water Treatment Task Force
Amato, Joe
Asset Stabilization Task Force
Rikkola, Ken
Decon Group
Raiha, John

ICS 208 - Site Safety Plan	Version Name: Refinery Site
Incident Name: 2018 Superior Refinery Fire	Period: Period 5 [05/05/2018 06:00 - 05/07/2018 06:00]
Applies to Site: Superior Refinery	

Site Characterization

Water	**Land**	**Weather**	Sunny
Wave Height	**Land Use**	**Air Temp**	23.1 Celsius
Speed		**Wind Speed**	17 mph
Direction		**Direction**	NW

Site Hazards

Yes	No	Hazards	Yes	No	Hazards	Yes	No	Hazards
☐	x	Boat Safety	x	☐	Fire, Explosion, In-situ Burning	x	☐	Pump Hose
x	☐	Chemical Hazards	x	☐	Heat Stress	x	☐	Slips, Trips, and Falls
☐	x	Cold Stress	☐	☐	Helicopter Operations	x	☐	Steam and Hot Water
☐	☐	Confined Spaces	x	☐	Lifting	☐	x	Trenching/Excavation
x	☐	Drum Handling	x	☐	Motor Vehicles	☐	x	UV Radiation
x	☐	Equipment Operations	x	☐	Noise	☐	x	Visibility
x	☐	Electrical Operations	x	☐	Overhead/Buried Utilities	x	☐	Weather
x	☐	Fatigue	☐	x	Plants/Wildlife	x	☐	Work Near Water

Air Monitoring Limits

Oxygen Level	19.5 to 22.5%	Benzene	1 PPM	Carbon Moxide	35 PPM
LEL	5%	Total Hydrocarbons	500 PPM	Hydroflouric Acid	3 PPM
Hydrogen Sulfide	10 PPM	Asbestos	0.1 Fiber per cubic centimeter	Sulfur Dioxide	2 PPM

Engineering Controls

☐	Source of release secured	☐	Valve(s) closed	☐	Energy sources locked/tagged out
☐	Site secured	x	Facility shut down		

Personal Protective Equipment Required

☐	Impervious suit	x	Hard hats	x	Boots
☐	Inner gloves	x	Respirators	x	Bunker Gear
x	Outer gloves	x	Eye protection	x	ERT SCBA
x	Flame resistant clothing	x	Personal flotation		

Additional Control Measures Established

x	Decontamination	x	Illumination	☐	Additional stations established
☐	Sanitation	☐	Medical surveillance	☐	Facilities provided

Work Plan

x	Booming	☐	Excavation	☐	Hot work
☐	Skimming	x	Heavy equipment	x	Appropriate permits used
x	Vac trucks	x	Sorbent pads		
x	Pumping	x	Patching		

Training

☐	Verified site workers trained per local/federal regulatory requirements	**Training Requirements**	

Organization

Position	*Name*	*Telephone/Radio*	*Position*	*Name*	*Telephone/Radio*
Incident Commander	Goedde, Ed	235-453-7419	Safety Officer	O'Brien, John	218-390-4367
Deputy Incident Commander	Logsdon, Paul	419-235-7189	Operations Section Chief	Fredman, Peter	320-288-6161

Emergency Plan

x	Fire Prevention Plan	x	Evacuation Plan		
x	Alarm System	x	First Aid Location		

Notifications

	Facility		*Phone*		*Facility*		*Phone*
x	**Hospital**	Essential St. Mary's Hospital	218-786-4000	x	**Fire**	Superior Fire Department	911
x	**Ambulance**	Gold Cross	911	x	**Law Enforcement**	Superior Police Department	911
	Air Ambulance			x	**Emergency Response/Rescue**	ERT	Radio

Initial Briefing

x	Initial safety briefing prepared for each site

Attachments/Appendices

Attachment	***Filename***
SDSs are available on the Refinery Intranet..rtf	SDSs are available on the Refinery Intranet..rtf
Wisconsin DNR Tick Information Sheet.pdf	Wisconsin DNR Tick Information Sheet.pdf

Asbestos Remediation Plan

2018 Superior Refinery Fire

Superior Refining Company LLC

Husky Superior Refinery, Superior, Wisconsin

Matthew G. Lazaric

(Wisconsin Asbestos License AII-13341)

David Keller, CIH, CSP

Operations Section Chief	**Signature**	5/4/18 **Date**
Planning Section Chief	**Signature**	4MAY18 **Date**
Incident commander	**Signature**	5/4/18 **Date**

GHD | 11719 Hinson Road Suite 100 Little Rock, Arkansas 72212

11156937

Table of Contents

1. Introduction and Objectives 1
2. Exposure Standards and Guidelines 2
   2.1 Perimeter Exposure Monitoring Criteria 2
3. Quality Assurance/Quality Control (QA/QC) and Reporting 3
4. Asbestos Abatement / Cleanup Plan 4
   4.1 Offsite / Extra-refinery Cleanup 4
   4.2 Small-Scale, Short Term Abatement 4
   4.3 General Asbestos Abatement and Site Cleanup 5

1. Introduction and Objectives

At the request of Superior Refining Company LLC (SRC), a subsidiary of Husky Energy, Inc. (Husky), GHD Services Inc. (GHD) will provide air monitoring and industrial hygiene (IH) support related to the 2018 Superior Refinery fire. The incident occurred at the SRC refinery (Site) located in Superior, Wisconsin. These services are provided to assist SRC with ensuring health and safety during cleanup and management of asbestos-containing materials or suspected asbestos-containing materials (collectively, ACM) that may be encountered during the incident and subsequent response and remediation efforts.

The purpose of this work plan is to implement a systematic assessment and recovery effort. This plan addresses proper ACM management during the response and remediation phases of the project. The specific objectives include the following:

- Prevent public or site worker exposure to ACM;
- Sample and document potential airborne asbestos exposures at the site perimeter during active asbestos cleanup / abatement;
- Identify and recover ACM external to the refinery fence line;
- Identify and recover damaged ACM within plant affected by the incident;
- Periodically observe cleanup activities to ensure proper cleanup and waste packaging methods are being utilized. Observe employee and equipment decontamination procedures; and
- Where safe and appropriate, sample materials suspected to contain asbestos. At this time, bulk sample collection is anticipated to be limited to sampling insulation that is remaining on fixed plant equipment including exchangers, drums, etc., that may be damaged and may require removal or repairs as overall plant repairs are conducted.

To accomplish the objectives outlined above, we propose the following activities:

- Ambient Air Sampling plan:
    a. During asbestos abatement monitoring, air samples will be collected along the perimeter of the asbestos abatement exclusion zone.
    b. The site asbestos abatement contractor (In-Line Construction or other Wisconsin-licensed asbestos abatement contractor) will collect personal samples from their employees that are performing abatement. GHD will receive and review all personal sample results.
    c. As appropriate, collect ongoing area samples surrounding the refinery.
    d. Analysis of air samples will be performed using phase contrast microscopy (PCM) with transmission electron microscopy (TEM) to be used as needed to clarify results.

- ACM Debris Survey
    a. As access is available to interior portions of the plant, identify locations for and coordinate placing asbestos warning / danger tape around locations of potential asbestos.
    b. Perform a limited visual asbestos survey of the fire affected and other damaged areas to determine areas that have ACM debris.
    c. Mark areas that have visible ACM debris.

- Damaged ACM Survey
    a. Where safe to do so, perform an asbestos survey of the fire affected and other damaged areas to determine equipment, piping, etc. that have ACM debris.
    b. As appropriate, collect bulk samples of suspect materials to confirm asbestos content so that the materials can be properly managed during the recovery.
    c. Mark on drawings, equipment, piping, etc. that has damaged ACM debris

GHD will continue air monitoring services until the project is completed and potential worker or community exposures to airborne asbestos fibers associated with the incident are eliminated or until directed by Husky that this service should be demobilized. The air monitoring data will be collected and compiled in accordance with established IH guidelines and practices. In addition, the results will be communicated to Husky, site workers, and regulatory agencies as required and/or as necessary to ensure the safety and health of potentially affected individuals.

2. Exposure Standards and Guidelines

The US Occupational Health and Safety Administration provides established exposure limits for a worker's exposure to hazardous chemical substances. Additionally, Threshold Limit values (TLVs) are established by the American Conference of Governmental Industrial Hygienists (ACGIH).

These are summarized below:

Analyte	OSHA PEL		ACGIH TLV	Units
	TWA	Excursion (30 minute exposure)	TWA[1]	
Asbestos	0.1 f/cc	1.0 f/cc	0.1 f/cc	Fibers per cubic centimeter of air.

2.1 Perimeter Exposure Monitoring Criteria

During asbestos abatement activities, work area perimeter air monitoring will be performed to ensure that engineering controls prevent the release of asbestos fibers from the work area. If ambient air samples exceed the accepted asbestos clearance criterion of 0.01 f/cc (AHERA standard for building re-occupancy), work will be halted and controls (wetting, covering or wrapping damaged materials, etc.) will be put in place. Work will not restart until work practices and/or engineering controls are modified to ensure perimeter concentrations do not exceed the clearance criterion.

2.2 Personal Air Monitoring and Bulk Sampling Methods

During asbestos abatement activities, OSHA methods ID160 (personal air monitoring) and ID191 (bulk sampling) will be followed. The collection of air monitoring samples will be completed using calibrated personal sampling pumps with 25-mm diameter cassettes with mixed-cellulose ester (MCE) filters and analyzed by PCM. All sampling results will be communicated to abatement personnel in compliance with applicable regulations.

3. Quality Assurance/Quality Control (QA/QC) and Reporting

Data collected will be stored in an on-site electronic archive. The monitoring/sampling data will be entered into an electronic database (spreadsheet or equivalent), and will undergo a quality assurance and quality control (QA/QC) review. Data entry forms and field notes will be kept on-site and retained for reference upon completion of the project. If necessary, full laboratory analysis data packages will be provided, and associated data validation processes will be arranged.

During the project, interim reporting of results may be required. This may include data summaries, maps, or other presentations of preliminary monitoring and sampling results. For example, a data summary will be provided to SRC every 24 hours, once data have undergone an initial QA/QC. Such reporting will be considered preliminary, as a final QA/QC of the data will not be complete. At the completion of the project, a report will be prepared in which data collected through monitoring and integrated sampling analyses will be compiled, summarized, and reported to SRC. Data contained in the final report will have been through the QA/QC process, will be reviewed by a Certified Industrial Hygienist (CIH), and will be considered final.

4. Asbestos Abatement / Cleanup Plan

There are several considerations for addressing damage to ACM during the recovery and repair operations to be conducted at and surrounding the plant. In order of importance, asbestos activities will be conducted to:

1. Address insulation that is off site or outside the refinery boundaries as a result of the incident. In instances observed to date, the insulation outside the refinery boundary or off refinery property is not suspect ACM. However, as a conservative response, insulation from the incident that is identified outside the refinery property will be collected for proper disposal.
2. Small-scale, short duration asbestos abatement activities needed to accommodate mechanical or process activities required to stabilize and de-energize refinery equipment and piping.
3. Large-scale cleanup of asbestos-containing debris, removal of asbestos-insulated equipment that is scheduled for demolition, removal and disposal of asphalt that may be contaminated with asbestos due to damage to mechanical equipment insulation.

4.1 Offsite / Extra-refinery Cleanup

Off-site cleanup of potential ACM debris from the refinery will be accomplished using the site embedded asbestos abatement contractor or other Wisconsin-licensed asbestos abatement contractor. The contractor will perform the cleanup of ACM primarily using manual methods.

As a conservative measure, materials identified offsite will be assumed to be ACM, and packaged and disposed of as such. Representative samples of collected materials will be taken for laboratory analysis to determine asbestos content. A general map will be generated to identify locations where debris has been located offsite.

Work methods and personal protective equipment (PPE) will be selected and utilized in accordance with existing regulations and based on the asbestos abatement contractor personnel exposure monitoring program records.

Should any pieces of metal that may be considered "evidence" be encountered during offsite insulation cleanup, the location will be recorded via GPS coordinates and Baker Engineering and Risk Consultants (BakerRisk) will be contacted to facilitate removal of evidence pursuant to the General Protocol for Identification and Collection of Evidence Items.

4.2 Small-Scale, Short Term Abatement

As may be required, and similar to routine maintenance, the operations and mechanical organizations will require limited scope asbestos abatement of mechanical equipment to accommodate the process of draining, de-energizing, and stabilizing the plant equipment. To accomplish this, the mechanical and process planners will coordinate directly with the abatement contractor to scope and schedule the smaller projects. This coordination will include measures (such as exclusion zones, barrier tape, and/or signage) to minimize the risk of exposure to non-abatement personnel.

The abatement contractor will make available adequate personnel to accommodate the limited abatement.

Abatement methods and techniques will vary and may include glovebag removal, mini enclosures, wrap and cut (whole pipe removal) or other methods as appropriate and as allowed by applicable regulations; provided, however that GHD will inform and receive consent from BakerRisk before removal of piping, process equipment, or structural components. All collected insulation materials will be packaged and disposed as ACM.

Should any pieces of metal that may be considered "evidence" be encountered during offsite insulation cleanup, the location will be recorded via GPS coordinates and Baker Engineering and Risk Consultants (BakerRisk) will be contacted to facilitate removal of evidence pursuant to the General Protocol for Identification and Collection of Evidence Items.

Decontamination procedures following abatement may vary from standard abatement decontamination. Decontamination facilities typical for asbestos abatement (multiple stage structures with showers) will be available and will be utilized. It may be necessary to perform additional decontamination steps to address the presence of asphalt throughout the work areas. The need for additional decontamination steps will be determined prior to the start of any individual project and any decontamination procedure outside the routine change and shower asbestos procedure will be performed with the assistance of SRC personnel and facilities.

4.3 General Asbestos Abatement and Site Cleanup

Once the site has been stabilized and equipment has been drained and de-energized, general site abatement and cleanup will commence. To the extent practicable, ACM that can be removed will be removed prior to conducting demolition activities that may disturb ACM. If limited demolition activities are required to gain access for ACM to be removed, work will be done in such a manner to minimize the risk of exposure. The work will include measures (such as exclusion zones, barrier tape, and/or signage) to minimize the risk of exposure to non-abatement personnel.

The cleanup methods to be utilized will, to some extent, be determined by successful methods that were developed during the work performed in previous remedial work phases. Those methods may include glovebag, enclosure removal, and alternative methods approved by the Wisconsin Department of Natural Resources. Large-scale removal of asphalt will require the use of heavy equipment. All collected insulation materials will be packaged and disposed as asbestos-containing materials.

Personal decontamination procedures following abatement may vary from standard abatement decontamination, but will generally following decontamination procedures accordance with 29 CFR 1910.120 (k). Decontamination facilities typical of asbestos abatement (multiple stage structures with showers) will be available and will be utilized. It may be necessary to perform additional decontamination steps to address the presence of asphalt throughout the work areas. The need for additional decontamination steps will be determined prior to the start of any individual project and any decontamination procedure outside the routine change and shower asbestos procedure will be performed with the assistance of Husky personnel and facilities.

Decontamination measures will be implemented to prevent contaminant tracking on and off Site. Vehicles, equipment, and workers leaving areas of potential contamination will exit through a Decontamination Reduction Zone (DRZ) prior to entry into Clean Zones from the Exclusions Zones. The DRZ will contain an equipment decontamination pad to accommodate the largest piece of on Site potentially contaminated equipment. The decontamination pad will be formed with a bed and berm, overlain by one layer of high-density polyethylene sloping toward a sump. The DRZ will provide, operate, and maintain portable, high pressure, wash units. The DRZ will maintain necessary equipment, pumps, and piping required to collect and contain equipment decontamination wastewater and sediment and transfer same to approved storage facilities. Decontamination facilities and work activities will be sequenced to prevent contaminant tracking