Official Draft Public Notice Version **May 2, 2023.**
The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.

FACT SHEET STATEMENT OF BASIS
NORTHROP GRUMMAN SYSTEMS CORPORATION
UPDES PERMIT NO. UT0024805
UPDES BIOSOLIDS PERMIT NUMBER: UTL-024805
RENEWAL PERMIT
MAJOR INDUSTRIAL

FACILITY CONTACTS

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DESCRIPTION OF FACILITY

This facility produces rocket motor propulsion units for space and military use and pyrotechnics for military and commercial use. It is located adjacent to State Highway U-83, 25 miles west of Brigham City, Utah. It has Standard Industrial Classification (SIC) code 3764, for Space Propulsion Units and SIC code 2899, for Manufacturing Pyrotechnics.

Northrop Grumman Systems Corporation's M-422 Waste Water Treatment Facility (WWTF) has bar screens, a grit chamber, an equalization basin, oxidation ditch, final clarifier, and is disinfected using ozone followed by an ozone contact tank. The effluent is then discharged to Blue Creek via Outfall 001. Currently M-422 receives on average 50,000 gallons/day (gpd) of domestic wastewater, 18,000 gpd of boiler water and 1,800 gpd of effluent from the bioreactor.

A wastewater treatment system for the production of solid rocket propellant was completed in 1989. The M-705 Wastewater Treatment System consists of precipitation, filtration, air stripping, carbon adsorption, ion exchange and neutralization. The flow is then split in which one part goes through the bioreactor and the rest is direct discharged. The anion regeneration brine and perchlorate contaminated wastewater is

neutralized, filtered, and then sent to a bioreactor and is discharged to the Wastewater Treatment Plant. In 1997, the perchlorate biodegradation system was constructed which can treat approximately 8,000 gpd to a non-detectable level. This is discharged to the M-422 and E-541 WWTF. The maximum flow for the M-705 processes is 24,000 gpd. The flow from the bioreactor is a maximum of 5,000 gpd.

Northrop Grumman Systems Corporation's E-541 WWTF has a bar screen, equalization basin, oxidation ditch, final clarifier, and disinfection utilizing ozone. The effluent is then discharged to Blue Creek via Outfall 002. Currently E-541 receives on average 45,000 gpd of domestic wastewater, 2,200 gpd of boiler blow down water, 1,500 gpd of effluent from the bioreactor and 1,500 gpd from M-705 wastewater treatment.

The sludge from the clarifier from M-422 and E-541 is thickened and belt pressed. The sludge is then disposed at the Northrop Grumman Systems Corporation Class IIIb permitted landfill. The solids for the bar screen and grit chamber are sent to the landfill.

DISCHARGE

DESCRIPTION OF DISCHARGE

Discharge 001 from the South plant (M-422 WWTF) was designed for an average flow of 0.35 MGD. Discharge 002 from the North plant (E-541 WWTF) was designed of 0.16 MGD.

Northrop Grumman Systems Corporation has been reporting self-monitoring results of discharge 001 and 002 on Discharge Monitoring Reports on a monthly basis. In the last five years Northrop Grumman has had a good compliance history. For more information regarding Northrop Grumman's compliance history see the following website echo.epa.gov/effluent-charts#UT0024805.

In the previous permit Northrop Grumman Systems Corporation was allowed to receive 10,000 gallons per week of water generated from rocket motor production at the Alliant Bacchus facility to be treated by Northrop Grumman Systems Corporation's industrial-chemical treatment plant. This practice will continue to be allowed during this permit cycle.

Outfall Number	Location of Discharge Outfalls
001	South Treatment Plant/M-422 at latitude 41°39'29" and longitude 112°26'49 "
002	North Treatment Plant/E-541 and commingling from M-705 at latitude 41°43'03" and longitude 112°26'26 "

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge flows into Blue Creek, and finally into the Great Salt Lake. Blue Creek is classified 2B, 3D, and 4 according to *Utah Administrative Code (UAC) R317-2-13*:

Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.

Class 3D -- Protected for waterfowl, shore birds and other water-oriented wildlife not included in Classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.

Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

TOTAL MAXIUM DAILY LOAD (TMDL) REQUIREMENTS

According to the Utah's 2021 303(d) Water Quality Assessment Report "Combined 2018/2020 Integrated Report Version 1.0", the receiving water for the discharge, Blue Creek (UT16020309-002_00) is impaired for boron, selenium, pH, E. coli, and total dissolved solids (TDS). Aluminum was delisted in this report because the more recent monitoring data is sufficient and is now supporting. A site-specific standard for total dissolved solids was adopted for Blue Creek to address the impairment. The standard is as follows per UAC R317-2-14.1, Footnote (4).

> *Blue Creek and tributaries, Box Elder County, from Bear River Bay, Great Salt Lake to Blue Creek Reservoir: March through October daily maximum 4,900 mg/l and an average of 3,800 mg/l; November through February daily maximum 6,300 mg/l and an average of 4,700 mg/l. Assessments will be based on TDS concentrations measured at the location of STORET 4960740.*

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

Based on reasonable potential, the concentration limits in the previous permit for Aluminum and Copper are being removed. Per the Wasteload analysis, the receiving segment of Blue Creek is listed as impaired for selenium without an approved TMDL. Therefore, the selenium limit is being set based on capping current load. Total Cadmium also showed reasonable potential and is also being added to the permit.

A typographical error from the previous permit was also corrected. The previous permit had a maximum weekly average for *E. coli* of 158 No./100 mL. This has been corrected to the secondary water quality standard of 157 No./100 mL. Additionally, perchlorate sampling has been changed from a grab to composite sampling at the request of the facility. This request was made to align the sampling type of this pollutant with others in the permit. Yearly sampling Organic Toxic Pollutants was added to the permit to more accurately classify the facilities waste stream. The final total phosphorous limit from the compliance schedule in the previous permit that became effective on January 1, 2022 has been incorporated into this permit.

Whole Effluent Toxicity testing at the facility is being changed. Previously the facility did acute WET testing. However, based on the discharge from the facility and flow rates in the receiving water, the Utah Pollutant Discharge Elimination System (UPDES) Permitting and Enforcement Guidance Document for Whole Effluent Toxicity (Biomonitoring), Utah Division of Water Quality, February 2018 indicates Chronic WET testing for the facility would be more appropriate. Due to the high Total Dissolved Solids of the receiving water (Blue Creek has a site specific standard for TDS), the facility was granted an alternate test species of *Daphnia magna* due to the intolerance of TDS by *Ceriodaphnia dubia*. Since the Utah WET Guidance Document indicates Chronic WET testing for the facility and there is no chronic test for *Daphnia magna*, the facility will continue to do acute WET testing for *Daphnia magna.* Additionally, chronic testing of *Ceriodaphnia dubia* are included in this permit as an indicator of toxicity. However, the chronic WET test for results alone for *Ceriodaphnia dubia* do not demonstrate noncompliance with the

Narrative Standards. As indicators, the chronic WET test results for *Ceriodaphnia dubia* alone are not used for determining reasonable potential for toxicity or noncompliance with the permit.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in 40 Code of Federal Regulations (CFR) Part 122.44 and in Utah Administrative Code (UAC) R317-8-4.2, effluent limitations are derived from Federal technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (UAC R317-1-3.2) or Utah Water Quality Standards (UAC R317-2). In cases where multiple limits have been developed, those that are more stringent apply. In cases where no limits or multiple limits have been developed, Best Professional Judgment (BPJ) of the permitting authority may be used where applicable. "Best Professional Judgment" refers to a discretionary, best professional decision made by the permit writer based upon precedent, prevailing regulatory standards or other relevant information.

Permit limits can also be derived from the WLA, which incorporates Secondary Treatment Standards, Water Quality Standards, including Total Maximum Daily Load (TMDL) impairments as appropriate, Antidegradation Review (ADR), and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. During this UPDES renewal permit development, a WLA and ADR were completed as appropriate. An ADR Level I review was performed and concluded that an ADR Level II review was not required for this permit renewal since there are no proposed increases in flow or concentrations from the existing Northrop Grumman operations. The WLA indicates that the effluent limitations will be sufficiently protective of water quality in order to meet State water quality standards in the receiving waters. The WLA and ADR are attached as an addendum to this Fact Sheet.

While Utah secondary Water Quality standards do not apply to industrial facilities, since the facility treats greater than 50,000 gallons of domestic sewage every operational day, limitations on total suspended solids (TSS), biochemical oxygen demand (BOD5), *E. coli* and pH are considered pollutants of concern. The limits for these pollutants were set best professional judgement based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The oil and grease are based on best professional judgment (BPJ). The limits for total ammonia (as N), total cadmium, dissolved selenium, total dissolved solids, and Isopropanol are based on the WLA. Attached is a WLA for this discharge into Blue Creek. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal. The permittee is expected to be able to comply with these limitations. Phosphorus limits were set using the Technology Based Phosphorous Effluent Limits (TBPEL).

The facility monitoring data can be found at https://echo.epa.gov/effluent-charts#UT0024805

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following

DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required

A quantitative RP analysis was performed on all toxic metals sampled in the previous permit to determine if there was reasonable potential for the discharges to exceed the applicable water quality standards. Based on the RP analysis, two of the parameters (Cadmium and Selenium) examined exceeded the most stringent chronic or acute water quality standard or were determined to have a reasonable potential to exceed water quality standards. Additionally, quarterly monitoring for toxic metals will still be required to generate RP for the next permit cycle. A copy of the RP analysis is included at the end of this Fact Sheet containing more detailed information regarding the RP analysis.

The permit limitations are

Parameter		Effluent Limitations *a			
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD Outfall 001 *b Outfall 002 *b	 0.35 0.16	--	--	--	--
Biological Oxygen Demand (BOD_5), mg/L	25	35	--	--	--
Total Suspended Solids(TSS), mg/L	25	35	--	--	--
Dissolved Oxygen, mg/L	--	--	--	4.5	--
Total Ammonia (as N), mg/L, Outfall 001 Summer (Jul-Sep) Fall (Oct-Dec) Winter (Jan-Mar) Spring (Apr-Jun)	 5.0 9.0 11.0 6.0	 5.0 9.0 11.0 6.0	 -- -- -- --	 -- -- -- --	 14.0 15.0 13.0 16.0
E. coli, No./100mL	126	157	--	--	--
Ozone, mg/L	--	--	--	--	0.1 b/
pH, Standard Units	--	--	--	6.5	9
Oil & Grease, mg/L	--	--	--	--	10.0
Total Cadmium µg/L	--	--	--	--	7.2
Dissolved Selenium, µg/L *c	--	--	--	--	18.4
Total Phosphorus (as P), mg/L (Final) *d, *e,	--	--	1.0	--	--

TDS, mg/L November – February March – October	 4,700 3,800	 -- --	 -- --	 -- --	 6,300 4,900
Isopropanol, mg/L	--	--	--	--	1
Sum, Other Volatile Organics, mg/L	--	--	--	--	2
WET, Chronic Biomonitoring Outfall 001	--	--	--	--	IC_{25}> 18.4% effluent
WET, Chronic Biomonitoring Outfall 002	--	--	--	--	IC_{25}> 9.4% effluent
WET, Acute Biomonitoring Outfall 001, 002	--	--	--	--	LC_{50} > 100% Effluent

SELF-MONITORING AND REPORTING REQUIREMENTS

The facility will have the following self-monitoring requirements. The monitoring frequency is based upon the design flow of the facility's outfalls. The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b	Continuous	Recorder	MGD
BOD_5	Monthly	Composite	mg/L
Chemical Oxygen Demand	Monthly	Composite	mg/L
TSS	Monthly	Composite	mg/L
Dissolved Oxygen	2x Monthly	Grab	mg/L
Total Ammonia (as N)	2x Monthly	Composite	mg/L
E. coli	Monthly	Grab	No./100mL
Ozone	3 x Week	Grab	mg/L
pH	2 x Month	Grab	SU
Oil & Grease *f	When Sheen Observed/Monthly	Grab	mg/L
Dissolved Aluminum	Monthly	Composite	µg/L
Total Arsenic	Monthly	Composite	µg/L
Total Cadmium	Monthly	Composite	µg/L
Total Chromium	Monthly	Composite	µg/L

Total Copper	Monthly	Composite	µg/L
Total Lead	Monthly	Composite	µg/L
Total Mercury	Monthly	Composite	µg/L
Total Nickel	Monthly	Composite	µg/L
Dissolved Selenium	Monthly	Composite	µg/L
Total Silver	Monthly	Composite	µg/L
Total Zinc	Monthly	Composite	µg/L
Total Phosphorus, *d, *e			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Solids, Total Dissolved	2x Monthly	Composite	mg/L
Isopropanol	Monthly	Grab	mg/L
Sum, Other Volatile Organics	Monthly	Grab	mg/L
WET – Biomonitoring *g	Quarterly		
Daphnia magna – Acute	1st & 3rd Quarter	Composite	Pass/Fail
Ceriodaphnia dubia - Chronic	1st & 3rd Quarter	Composite	Report Only
Fathead Minnows - Chronic	2nd & 4th Quarter	Composite	Pass/Fail
Perchlorate	Monthly	Composite	mg/L
Orthophosphate (as P), *e	Monthly		
Effluent		Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) *e, *h	Monthly		
Influent		Composite	mg/L
Effluent		Composite	mg/L
Nitrate, NO3 *e	Monthly	Composite	mg/L
Nitrite, NO2 *e	Monthly	Composite	mg/L
Organic Toxic Pollutants,			
Influent	Yearly	Grab/Composite	mg/L
Effluent	Yearly	Grab/Composite	mg/L

*a See Definitions, *Part VIII*, for definition of terms.

*b If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

*c The receiving segment on Blue Creek is listed as impaired for constituent without an approved TMDL; limit to be set to the water quality standard.

*d In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

*e These reflect changes required with the adoption of *UCA R317-1-3.3*, Technology-based Phosphorus Effluent Limits rule.

*f Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

*g The acute *Daphnia magna* and chronic *Ceriodaphnia* will be tested during the 1st and 3rd quarters. Chronic fathead minnows will be tested during the 2nd and 4th quarters.

BIOSOLIDS

For clarification purposes, sewage sludge is considered solids, until treatment or testing shows that the solids are safe, and meet beneficial use standards. After the solids are tested or treated, the solids are then known as biosolids. Class A biosolids, may be used for high public contact sites, such as home lawns and gardens, parks, or playing fields, etc. Class B biosolids may be used for low public contact sites, such as farms, rangeland, or reclamation sites, etc.

DESCRIPTION OF TREATMENT AND DISPOSAL

Sludge is generated in NORTHROP GRUMMAN Thiokol Propulsion's M-422 and E-541 Waste Water Treatment Facilities. Both of which are oxidation ditch processes that treat a combination of domestic and industrial wastewater. At both facilities the sludge from the clarifiers is dewatered through belt presses and disposed of onsite ate the Class IIIb permitted landfill.

SELF-MONITORING REQUIREMENTS

Under *40 CFR 503.16(a)(1),* the self-monitoring requirements are based upon the amount of biosolids disposed per year and shall be monitored according to the chart below.

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)		
Amount of Biosolids Disposed Per Year		Monitoring Frequency
Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times

Northrop Grumman Systems Corporation has disposed of an average of 60 DMT of biosolids a year over the past 5 years, therefore they would only be required to once a year.

Landfill Monitoring

Under *40 CFR 258,* the landfill monitoring requirements include a paint filter test. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill *(40 CFR 258.28(c)(1).*

BIOSOLIDS LIMITATIONS

Heavy Metals

Class A Biosolids for Home Lawn and Garden Use

The intent of the heavy metals regulations of Table 3, *40 CFR 503.13* is to ensure the heavy metals do not build up in the soil in home lawn and gardens to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see *Part III. C.* of the permit) to made available to all people who are receiving and land applying Class A biosolids to their lawns and gardens. If the instructions of the information sheet are followed to any reasonable degree, the Class A biosolids will be able to be land applied year after year, to the same lawns and garden plots without any deleterious effects to the environment. The information sheet must be provided to the public, because the permittee is not required, nor able to track the quantity of Class A biosolids that are land applied to home lawns and gardens.

Class A Requirements with Regards to Heavy Metals

If the biosolids are to be applied to a lawn or home garden, the biosolids shall not exceed the maximum heavy metals in Table 3 below. If the biosolids do not meet these requirements, the biosolids cannot be sold

or given away for applications to home lawns and gardens.

Class B Requirements for Agriculture and Reclamation Sites

The intent of the heavy metals regulations of Tables 1, 2 and 3, of *40 CFR 503.13* is to ensure that heavy metals do not build up in the soil at farms, forest land, and land reclamation sites to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see *Part III. C*. of the permit) to be handed out to all people who are receiving and land applying Class B biosolids to farms, ranches, and land reclamation sites (if biosolids are only applied to land owned by the permittee, the information sheet requirements are waived). If the biosolids are land applied according to the regulations of *40 CFR 503.13*, to any reasonable degree, the Class B biosolids will be able to be land applied year after year, to the same farms, ranches, and land reclamation sites without any deleterious effects to the environment.

Class B Requirements With Regards to Heavy Metals

If the biosolids are to be land applied to agricultural land, forest land, a public contact site or a reclamation site it must meet at all times:

The maximum heavy metals listed in *40 CFR Part 503.13(b) Table 1* and the heavy metals loading rates in *40 CFR Part 503.13(b) Table 2*; or

The maximum heavy metals in *40 CFR Part 503.13(b) Table 1* and the monthly heavy metals concentrations in *40 CFR Part 503.13(b) Table 3*.

Tables 1, 2, and 3 of Heavy Metal Limitations

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits [1], (mg/kg)	CPLR [2], (mg/ha)	Pollutant Conc. Limits [3] (mg/kg)	APLR [4], (mg/ha-yr)
Total Arsenic	75	41	41	2.0
Total Cadmium	85	39	39	1.9
Total Copper	4300	1500	1500	75
Total Lead	840	300	300	15
Total Mercury	57	17	17	0.85
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	21
Total Selenium	100	100	100	5.0
Total Zinc	7500	2800	2800	140
1, If the concentration of any 1 (one) of these parameters exceeds the Table 1 limit, the biosolids cannot be land applied or beneficially used in any way.				
2, CPLR - Cumulative Pollutant Loading Rate - The maximum loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially used on agricultural, forestry, or a reclamation site.				
3, If the concentration of any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids cannot be land applied or beneficially used in on a lawn, home garden, or other high potential public contact site. If any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids may be land applied or beneficially reused on an agricultural, forestry, reclamation site, or other high potential public contact site, as long as it meets the requirements of Table 1, Table 2, and Table 4.				

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits [1], (mg/kg)	CPLR [2], (mg/ha)	Pollutant Conc. Limits [3] (mg/kg)	APLR [4], (mg/ha-yr)
4, APLR - Annual Pollutant Loading Rate - The maximum annual loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially reused on agricultural, forestry, or a reclamation site, when they do not meet Table 3, but do meet Table 1.				

Any violation of these limitations shall be reported in accordance with the requirements of Part III.F.1. of the permit .If the biosolids do not meet these requirements they cannot be land applied.

Pathogens

The Pathogen Control class listed in the table below must be met;

Pathogen Control Class	
503.32 (a)(1) - (5), (7), (8), Class A	503.32 (b)(1) - (5), Class B
B Salmonella species –less than three (3) MPN[1] per four (4) grams total solids (DWB)[2] or Fecal Coliforms – less than 1,000 MPN per gram total solids (DWB).	Fecal Coliforms – less than 2,000,000 MPN or CFU[3] per gram total solids (DWB).
503.32 (a)(6) Class A—Alternative 4	
B Salmonella species –less than three (3) MPN per four (4) grams total solids (DWB) or less than 1,000 MPN Fecal Coliforms per gram total solids (DWB), And - Enteric viruses –less than one (1) plaque forming unit per four (4) grams total solids (DWB) And - Viable helminth ova –less than one (1) per four (4) grams total solids (DWB)	
1 - MPN – Most Probable Number	
2 - DWB – Dry Weight Basis	
3 - CFU – Colony Forming Units	

Class A Requirements for Home Lawn and Garden Use

If biosolids are land applied to home lawns and gardens, the biosolids need to be treated by a specific process to further reduce pathogens (PFRP), and meet a microbiological limit of less than less than 3 most probable number (MPN) of *Salmonella* per 4 grams of total solids (or less than 1,000 most probable number (MPN/g) of fecal coliform per gram of total solids) to be considered Class A biosolids. At this time Northrop Grumman Systems Corporation's does not intend to distribute biosolids to the public for use on the lawn and garden and thus is not required meet Class A Biosolids requirements currently.

The practice of sale or giveaway to the public is an acceptable use of biosolids of this quality as long as the biosolids continue to meet Class A standards with respect to pathogens. If the biosolids do not meet Class A pathogen standards the biosolids cannot be sold or given away to the public, and the permittee will need find another method of beneficial use or disposal.

Pathogens Class B

If biosolids are to be land applied for agriculture or land reclamation the solids need to be treated by a specific process to significantly reduce pathogens (PSRP). At this time Northrop Grumman Systems Corporation's does not intend to distribute bulk biosolids for land application and thus is not required meet Class B Biosolids requirements currently.

Vector Attraction Reduction (VAR)
If the biosolids are land applied Northrop Grumman Systems Corporation's will be required to meet VAR through the use of a method of listed under *40 CFR 503.33.* At this time Northrop Grumman Systems Corporation's does not intend to distribute biosolids to the public for beneficial use, and will be disposing of them in a landfill. Under *40 CFR 503.33(b)(11)*

If the biosolids do not meet a method of VAR, the biosolids cannot be land applied.

If the permittee intends to use another one of the listed alternatives in *40 CFR 503.33*, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice

Landfill Monitoring
Under *40 CFR 258,* the landfill monitoring requirements include a paint filter test to determine if the biosolids exhibit free liquid. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill *(40 CFR 258.28(c)(1).*

Record Keeping
The record keeping requirements from *40 CFR 503.17* are included under *Part III.G*. of the permit. The amount of time the records must be maintained are dependent on the quality of the biosolids in regards to the metals concentrations. If the biosolids continue to meet the metals limits of *Table 3* of *40 CFR 503.13*, and are sold or given away the records must be retained for a minimum of five years. If the biosolids are disposed in a landfill the records must retained for a minimum of five years.

Reporting
Northrop Grumman Systems Corporation's must report annually as required in *40 CFR 503.18*. This report is to include the results of all monitoring performed in accordance with *Part III.B* of the permit, information on management practices, biosolids treatment, and certifications. This report is due no later than February 19 of each year. Each report is for the previous calendar year.

MONITORING DATA

METALS MONITORING DATA
Northrop Grumman Systems Corporation's was required to sample for metals at least once per year. The monitoring data is summarized below.

Metals Monitoring Data

Metals Monitoring Data,			
Parameter	Table 3, mg/kg (Exceptional Quality)	Average, ug/L	Maximum, ug/L

Arsenic	41.0	0.02	0.02
Cadmium	39.0	0.00135	0.0018
Copper	1,500.0	0.075525	0.19
Lead	300.0	0.02	0.02
Mercury	17.0	0.0003	0.0003
Molybdenum	75.0	0.002	0.005
Nickel	400.0	0.015375	0.024
Selenium	36.0	0.03	0.03
Zinc	2,800.0	0.61975	2.39

PATHOGEN MONITORING DATA

Northrop Grumman Systems Corporation's landfills all biosolids generated at the facility, therefore they are not required

STORM WATER

Separate storm water permits may be required based on the types of activities occurring on site.

Permit coverage under the Multi Sector General Permit (MSGP) for Storm Water Discharges from Industrial Activities is required based on the Standard Industrial Classification (SIC) code for the facility and the types of industrial activities occurring. If the facility is not already covered, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation. Previously storm water discharge requirements and coverage were combined in this individual permit. These have been separated to provide consistency among permittees, electronic reporting for storm water discharge monitoring reports, and increase flexibility to changing site conditions.

Permit coverage under the Construction General Storm Water Permit (CGP) is required for any construction at the facility which disturb an acre or more, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water permit prior to the period of construction.

Information on storm water permit requirements can be found at http://stormwater.utah.gov

PRETREATMENT REQUIREMENTS

Any process wastewater that the permittee discharges to a POTW, either as a direct discharge or as a hauled waste, is subject to federal, state, and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the permittee shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the POTW accepting the waste.

In addition, in accordance with 40 CFR 403.12(p)(1), the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring), dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317 -2-7.2.

Since the permittee is a major industrial discharger, the renewal permit will again require whole effluent toxicity (WET) testing. For major facilities under 1 MGD, the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control recommends quarterly WET testing. As a result, the facility will be required to conduct Chronic quarterly biomonitoring or Acute Quarterly biomonitoring as described in the permit. New concentrations are listed in the table below and were discussed in the changes section above. The IC25 is the inhibition concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.

The permit contains the standard requirements for accelerated testing upon failure of a WET test and a PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary. The permit also contains a toxicity limitation re-opener provision. This provision allows for modification of the permit at any time to include WET limitations and/or increased WET monitoring, should additional information indicate the presence of toxicity in the discharge.

PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years.

Drafted and Reviewed by
Lonnie Shull, Discharge Permit Writer, Biomonitoring
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Mike Allred, TMDL/Watershed
Chris Shope, Wasteload Analysis
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: Month Day, Year
Ended: Month Day, Year

Comments will be received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870

The Public Noticed of the draft permit was published in the (NEWSPAPER OF RECORD FOR AREA).

During the public comment period provided under R317-8-6.5, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in R317-8-6.12.

ADDENDUM TO FSSOB

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they were not considered Major and the permit is not required to be re Public Noticed.

Responsiveness Summary

(Explain any comments received and response sent. Actual letters can be referenced, but not required to be included).

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ATTACHMENT 1

Effluent Monitoring Data

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Wasteload Analysis

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ATTACHMENT 4

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis[1]. They are;

Outcome A: A new effluent limitation will be placed in the permit.
Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
Outcome D: No limitation or routine monitoring requirements are in the permit.

(REASONABLE POTENTIAL LANGUAGE)

Initial screening for metals values that were submitted through the discharge monitoring reports showed that a closer look at some of the metals is needed. A copy of the initial screening is included in the "Effluent Metals and RP Screening Results" table in this attachment. The initial screening check for metals showed that the full model needed to be run on

The RP model was run on (metal) using the most recent data back through 2022 This resulted in between 10 and 112 data points and that there is a Reasonable Potential for a chronic or acute limit for Arsenic and Selenium at Outfall 001 and Aluminum at Outfall001 . Reviewing the data showed that there could be at least one outlier in the data. The EPA ProUCL model was used to evaluate the data. It showed that outliers existed for all of these metals. These outliers were eliminated from the data and RP was run again. After removing the outliers, none of these metals showed RP for acute or chronic as the Maximum Effluent Concentration was lower than the Maximum allowable concentration from the current Wasteload Analysis. This result indicates that the inclusion of an effluent limit for (metal) is not required at this time, and that routine monitoring requirements can be added or increased in the permit.(Outcome C from Reasonable Potential Guide)

Additionally, after reviewing the current Wasteload analysis, it was discovered that the minimum detection limit for Mercury was higher than the chronic MAC from the Wasteload. Even with most of the Mercury results as non-detect this still indicated RP for chronic mercury. As a result, the facility collected 10 samples of ultra trace mercury with a detection limit below the MAC. After running RP at both 95% and 99% confidence limits, it was found there was no reasonable potential for the facility to exceed the MAC for mercury.

A Summary of the RP Model inputs and outputs are included in the table below.

The Metals Initial Screening Table and RP Outputs Table are included in this attachment.

RP input/output summary

2023 Summary Results of Reasonable Potential Analysis for NORTHROP GRUMMAN (UT0021725)

Parameter	Outfall	No. of Samples	MEC*1 mg/L	Water Quality Standard MAC*2		Outcome/Result
				Acute mg/L	Chronic mg/L	
Total Aluminum /b	001	56	0.366	0.75	NA	MEC < MAC*4
Total Arsenic b/	001	50	0.0131	1.314	1.618	MEC < MAC*4
Total Cadmium	001	25	0.0059	0.007	0.032	MEC < MAC *3
Total Chromium	001	56	0.024	7.413	3.094	MEC < MAC*4
Total Copper	001	112	0.0987	0.195	0.351	MEC < MAC*4

[1] See Reasonable Potential Analysis Guidance for definitions of terms

Total Lead	001	31	0.0126	1.177	0.147	MEC < MAC*4
Total Mercury a/	001	10	0.0253	10.036	0.063	MEC < MAC*4
Total Nickel	001	56	0.003	6.321	2.228	MEC < MAC*4
Total Selenium b/	001	55	0.0592	0.002	NA	MEC > MAC *3
Total Silver	001	26	0.0042	0.144	No Standard	MEC < MAC*4
Total Zinc	001	56	0.281	1.531	5.029	MEC < MAC*4
Total Aluminum b/	002	58	0.324	0.75	NA	MEC < MAC*4
Total Arsenic	002	56	0.0111	1.314	1.618	MEC < MAC*4
Total Cadmium	002	23	0.0091	0.007	0.032	MEC > MAC *3
Total Chromium	002	56	0.137	7.413	3.094	MEC < MAC*4
Total Copper	002	56	0.101	0.195	0.351	MEC < MAC*4
Total Lead	002	25	0.00823	1.177	0.147	MEC < MAC*4
Total Mercury /a	002	10	0.00753	10.036	0.063	MEC < MAC*4
Total Nickel /a	002	56	60.4	6.321	2.228	MEC < MAC*4
Total Selenium	002	56	0.0571	0.002	NA	MEC < MAC *3
Total Silver	002	27	0.0108	0.144	No Standard	MEC < MAC*4
Total Zinc b/	002	56	1.65	1.531	5.029	MEC < MAC*4

a/ Units in µg/L
b/ Outlier(s) removed

*1 MEC – Maximum expected effluent concentration as determined from existing data set and sufficiently sensitive method detection limits.

*2 MAC – Maximum allowable concentration from current Water Quality Standards.

*3 MEC Greater Than MAC – New Acute or Chronic limit required for Metals (Outcome A)

*4 MEC less than MAC – No Acute or Chronic limit required for metals (Outcome C).

Based upon the policy "Reasonable Potential Analysis Guidance", developed by the Utah Division of Water Quality and implemented on September 10, 2015; it was determined not to include any total metal effluent limits in the 2019 renewal permit. This is because the data points reviewed were well below the Water Standards and/or applicable method detection limits. Metals monitoring will continue however, as detailed in the permit. This will be re-evaluated during the next permit cycle as appropriate.