



General Manager
334 Front Street
Ketchikan, AK. 99901

(907) 228-5603 phone
(907) 225-5075 fax

5b(1)

TRANSMITTAL MEMORANDUM

TO: The Honorable Mayor and City Council

FROM: Karl R. Amylon, General Manager

DATE: March 19, 2021

RE: **Authorizing Budget Transfer – Bailey Generator #4 (BAG #4) Oil Change**

The motion detailed below was prepared at the request of Electric Division Manager Andrew Donato, who asked that it be placed before the City Council for consideration at its meeting of April 1, 2021. If adopted, the motion provides for transferring \$37,672 from the Electric Division's Additional Projects capital account to the Generation Oil Lubricants account (Account No. 525.02), in order to fund a BAG #4 oil change. The rationale for the oil change is detailed in Mr. Donato's transmittal memorandum and requires no elaboration on the part of my office. I concur with the Electric Division Manager's recommendation.

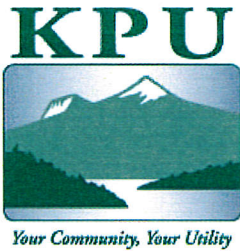
Mr. Donato will attend the City Council meeting of April 1, 2021, in order to address any questions and/or comments that Councilmembers may have.

A motion has been prepared for City Council consideration.

RECOMMENDATION

It is recommended the City Council adopt the motion authorizing the General Manager to transfer \$37,672 from the Electric Division's Additional Projects capital account to the Generation Oil Lubricants account (Account No. 525.02), in order to fund a BAG #4 oil change.

Recommended Motion: I move the City Council authorize the General Manager to transfer \$37,672 from the Electric Division's Additional Projects capital account to the Generation Oil Lubricants account (Account No. 525.02), in order to fund a BAG #4 oil change.



Electric Division
1065 Fair Street
Ketchikan, AK 99901

Phone: (907) 225-5505
Fax: (907) 247-0755

TRANSMITTAL MEMORANDUM

TO: Karl Amylon, KPU General Manager
Lacey Simpson, Assistant KPU General Manager

FROM: Andy Donato, KPU Electric Division Manager

DATE: March 15, 2021

SUBJECT: Bailey Generator #4 (BAG #4) Oil Change

Background:

Among KPU's diesel fleet, BAG #4 has been the primary go-to unit due to its size of 10.5 MW and flexibility in automated ease to start and operate. As a result, this unit gets base loaded in nearly all diesel dispatch situations and hence accumulates the most hours annually. To date, the unit shows 16,351 hours of operation (about 2 years) which isn't much considering purpose and design criteria, however enough to familiarize us with some re-occurring failures. One of these being cylinder head coolant leaks.

Since last year was a relatively wet year, we took advantage of BAG #4 off-line time to resolve several cylinder head issues. We had a number of refurbished heads on the unit and at the time thought the price savings of refurbished heads outweighed any expected shorter than normal service life. In actuality, shorter than normal life became a major liability and we made a concerted effort to replace all refurbished heads with new factory OEM heads. The previous refurbished cylinder heads and respective coolant leaks took its toll on the engine oil. The leaks left small residues of contaminants, namely silicon, sodium, and potassium, in the oil which were near impossible to remove. One method to reduce these contaminants is called "sweetening". In this process, several drums of engine oil are removed and replaced with several drums of new oil. In this way, the number of particles of contaminants are diluted out. This was done twice since the last complete oil change and now that all the head work is complete, it is advisable to replace the engine oil in its entirety to reestablish all analysis base lines.

With an extended diesel campaign likely coming up soon with SEAPA's annual outage we're looking at an expedited schedule for BAG #4 PM's. SEAPA has announced their window for their annual line outage as June 10th to June 18th.

Cost of New Oil:

Quotations were sought for 2,530 gallons of oil (46 drums), delivered in drums. The oil is a SAE 40 weight so, Chevron Delo 400, Taro 40DP30, or Mobilgard M430, are equivalent. Quotations were as follows:

Petro Marine (Taro 40DP30)	\$37,671.70
Service Auto Parts (Chevron DELO 400)	\$47,470.00
Delta Western Petroleum (Mobilgard M430)	\$37,260.00

Since we already have a lube oil system established with Petro Marine, and whereas Petro Marine stores/stocks additional drums to have on hand for any short request of ours, this is considered a value added service that is currently provided. Additionally, it has been our experience that the Mobilgard M430 is more prone to sludging than the Taro 40DP30, making our choice the Taro 40DP30 product. The request for approval is for an expenditure of \$37,671.70 for 46 drums of Taro 40DP30 from Petro Marine.

As this was not budgeted in the Electric Division's 2021 budget, we are requesting approval to transfer funds from the approved 2021 CIP account "Additional Projects" in the amount of \$37,672 to account 525.02, Generation Oil Lubricants.

Purchase Requisition

Bill to: City of Ketchikan
334 Front Street
Ketchikan, AK 99901
907-225-3111

Ship to: Ketchikan Public Utilities
Electric Division
1065 Fair Street
Ketchikan, AK 99901
907-225-5505

DATE March 11, 2021

PURCHASE NO. _____

APPROVED BY _____

VENDOR: Petro Marine Services

CONFIRMING:

NON-CONFIRMING:

SHIP VIA:

FOB:

ACCOUNT NO:

DESCRIPTION

Change Oil in BAG 4. Oil Samples keep coming back Abnormal even after Sweetening. No Internal Leaks into Engine.

[illegible]

REQUESTED BY

Scott May

SUBTOTAL	\$	37,671.70
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ESTIMATED FREIGHT

P.O. TOTAL	\$ 37,671.70
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INSTRUCTIONS

WE APPRECIATE THE OPPORTUNITY TO SERVE YOU!

* * Q U O T E * *

Page 1 of 1

Service Auto Parts
4106 Tongass Avenue
Ketchikan, AK 99901

ACCT #	SOLD TO	DATE	TIME
4905	City Of Ketchikan	03/09/2021	09:50
	334 Front Street		
SR #	Ketchikan, AK 99901-0000	STORE #	KMP #
19		500005193	13 Ben

PART NUMBER	LN	DESCRIPTION	QUANTITY	LIST	PRICE	TOTAL
55-GAL 40W	CHV	DELO 400 40W 55 GAL	47.00	1,889.49	1010.0000	47,470.00

TOTAL ----->

47,470.00

*** Plus Applicable Taxes. ***

*** Prices Subject to Change Without Notice. ***

* * THIS IS NOT AN INVOICE * *

Scott May

From: Jim Fowler <Jim.Fowler@deltawestern.com>
Sent: Friday, March 5, 2021 9:44 AM
To: Scott May
Cc: John Cannon; Ryan Macnamara; Nathan Teater
Subject: Mobilgard M430 and 312 quote

CAUTION: External Email

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Scott,

Here are the quotes for Mobilgard M430 and Mobilgard 312 in full container loads to Ketchikan. I will make arrangements to store up to 8 drums of M430 and 12 to 16 drums of 312 in Ketchikan for Bailey Power Plant if you purchase from us.

Mobilgard M430 drum: $\$810.00 \times 46 = \$37,260.00$ *→ FOR BAG #4*
Mobilgard 312 drum: $\$780.00 \times 30 = \$23,400.00$ *→ FOR BAG #3*
Total: \$60,660.00

This includes freight to AML yard Ketchikan.

Jim Fowler | Ketchikan Site Manager | **Delta Western Petroleum**
Jim.fowler@deltawestern.com
Cell: (907) 821-3003



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LOAMS

Lube Oil Analysis Management System

Bureau Veritas Oil Condition Monitoring -
3401 Jack Northrop Ave, Hawthorne, CA - 90250
800-424-0099

Sample Analysis Report

Status: ABNORMAL

Account Information
Lab Customer ID#: 70483
Company Name: Ketchikan Public Utilities
Company Worksites: Ketchikan, AK
1065 FAIR ST.
Company Address: KETCHIKAN, AK, 99901

Unit Information
Unit ID: BA-4/311314
Unit Mfg: -
Unit Model: -
Unit Serial #: -
Unit Worksites: #2

Sample Information
Lab No.: 202008060730
Sample Tracking #: -
Sample Date: Jul 15, 2020
Received Date: Aug 06, 2020
Completed Date: Aug 11, 2020
Component Information
Cpnt. Description: ENGINE
Cpnt. Mfg: Wartsila
Cpnt. Model: 12V46B
Cpnt. Serial #: 9987
Cpnt. Type: DIESEL ENGINE

Other Sample Information
PO No.: EL-632
Work Order No.: -
Reference No.: 3798094
Filter Age: 0
Make Up Oil Amount: 0
Fluid Information
Fluid Manufacturer: CHEVRON
Fluid Brand/Product: UNKNOWN
Fluid Grade: SAE 40

Maintenance Recommendations for Lab No.: 202008060730

Evaluated By: John Zufelt - Data Analyst

ANALYSIS INDICATES AN ABNORMAL LEVEL OF CONTAMINATION IS PRESENT! COOLANT additives are present. Glycol test negative. Test result(s) have been checked and verified. MONITOR the coolant system for loss and/or unusual required additions. NOTE: >999 or 9999 values represent maximum instrument output. Other test results are satisfactory. RESAMPLE at 1/2 normal interval.

SPECTROCHEMICAL ANALYSIS PPM

SPECTROCHEMICAL ANALYSIS (PPM)			Wear Metals										Contaminants			Additives							
	LAB NO.	SAMPLE DRAWN	Iron	Chromium	Nickel	Aluminum	Lead	Copper	Tin	Silver	Titanium	Vanadium	Silicon	Sodium	Potassium	Boron	Molybdenum	Phosphorus	Zinc	Calcium	Barium	Magnesium	Antimony
ADD	0730	07/15/20	6	<1	<1	2	1	<1	<1	0.2	<1	<1	10	134 *	62 *	6	3	634	714	N/R	<1	34	<1
A-C	0465	11/15/19	5	<1	<1	1	<1	<1	<1	<0.1	<1	<1	13	81 *	37	4	1	570	644	>9999	<1	30	<1
ADD	0628	10/05/19	8	<1	<1	1	<1	1	<1	<0.1	<1	<1	13	185 *	87 *	7	2	622	724	>9999	<1	32	<1
A-4	0761	06/17/19	9	<1	<1	3	<1	1	<1	<0.1	<1	<1	13	254 *	119 *	10	4	695	731	>9999	<1	33	<1
A5	0467	03/18/19	8	<1	<1	4	<1	1	<1	<0.1	<1	<1	11	167 *	81 *	8	3	653	710	>9999	<1	31	<1
	1165	02/05/19	6	<1	<1	<1	1	1	<1	0.1	<1	<1	10	17	8	2	2	495	685	>9999	<1	25	<1

SAMPLE INFORMATION

LAB NO.	SAMPLE DRAWN	UNIT TIME	FLUID TIME	UOM	FILTER CHG.	LUBE SERVICE
0730	07/15/20	16134		HR	No	S
0465	11/15/19	16107		HR	-	
0628	10/05/19	16107		HR	Yes	S
0761	06/17/19	15990		HR	-	
0467	03/18/19	15500		HR	-	
1165	02/05/19	15000		HR	-	S

FLUID PROPERTIES/CONTAMINANTS

Water	D7279 Vis 100 °C	Visc Grade	Fuel #	GLY Test	D7686 Soot %	TBN
<0.1	14.3	40	<0.50	NEG	0.46	30.50
<0.1	14.0	40	<0.50	NEG	0.26	33.52
<0.1	14.4	40	<0.50	NEG	0.44	30.21
<0.1	15.1	40	<0.50	NEG	0.46	31.58
<0.1	14.4	40	<0.50	NEG	0.51	29.47
<0.1	13.9	40	<0.50	NEG	0.06	7.01

KEY: UoM - Unit of Measure Y - Yes N - No C - Changed S - Sampled > - Greater Than < - Less Than N/R - Not Reported (M) - Modified Method

Testing performed by Bureau Veritas, an ISO/IEC 17025:2017 accredited laboratory by ANAB. Certificate and scope of accredited methods can be found at <https://oil-testing.com/iso-17025-quality-program/>. †: Not in scope of accreditation. For further details on outsourced testing, contact the laboratory directly. ‡: This test is run based on a trigger test, in this case "<" values indicate that the trigger test was either not positive or the result was below the reportable limit. For a list of trigger tests refer to <http://www.bureauveritas.com/oil-analysis>. Notice: This analysis is intended as an aid in predicting mechanical wear. Test results, maintenance recommendations and accuracy are affected by customer provided samples, equipment identification, maintenance history and apply only to this sample as provided. No guarantee, expressed or implied, is made against failure of this piece of equipment or a component thereof. The ultimate responsibility for the maintenance of this piece of equipment and all its components is the responsibility of the equipment owner.