

From: Terner, Laura M.
Sent: Wednesday, June 19, 2013 4:40 PM
To: Rayner, Heather L.
Cc: Matiisen, Heather; Younggren, Jeffrey
Subject: Communications Tower into GPS

Hi Heather,

Please value communications tower at invoice value \$65,592.33.

Thanks!

Laura M. Terner

*Capital Analyst, Bighorn Business Unit
Encana Corporation
403.645.3761*

Take a closer look: www.encana.com

Please note some Encana offices are closed the first and third Friday of each month.



PURCHASE ORDER

SELLER

Spartech Manufacturing Ltd. (270900)
301 27 St SE
Calgary AB T2A 7V2
Canada

ATTN: Rob Pupulin 403-695-2879

SEND INVOICE TO

Encana Corporation
150 9 Ave SW
PO Box 2850
Calgary AB T2P 2S5
Canada

ATTN: Garnet Tremere 403-645-4225

BUYER/CONTACT: Pam Sword

PHONE: 403 645-7591

Purchase Order Number: PO41714
Purchase Order Date: 14 Aug 12
Order Revision / Date: 0
Ordered By: Pam Sword

SHIP TO

Facilities Canadian Deep Basin
AB
Canada

INCOTERMS:

PAYMENT TERMS: Net 30 Days
CURRENCY: CAD
AFIE NUMBER HEADER:

PLEASE REFERENCE OUR PURCHASE ORDER NUMBER ON ALL
INVOICES, PACKING SLIPS, AND ANY DOCUMENTS REFERENCING
THIS ORDER.

FAX:

E-MAIL: Pam.Sword@EnCana.com

LINE	ITEM #	DESCRIPTION	QTY	UOM	UNIT PRICE	EXTENDED PRICE	DATE REQUIRED	REF. #
CONTACTS:								
garnet.tremere@encana.com (Technical)								
pam.sword@encana.com (Commercial)								
Pupulin.Rob@spartechmanufacturing.com (Vendor)								
Scope of Supply: Vendor is to supply (1) Communication Tower Building (Spartech Quote Number PN30302-REV3) for the Resthaven Facility as laid out in the attached Encana Communication Work Scope.								
Delivery Instruction: Contact Mark Bornyk at Encana Logistics and Commodities Desk 403-645-2622 to arrange shipping to 08-11-060-03 W6M site.								
Delivery Date: October 17, 2012								
Delivery Point: 08-11-060-03 W6M								
Attention: Garnet Tremere								
Invoicing Instructions:								



PURCHASE ORDER

Purchase Order Number: PO41714
Purchase Order Date: 14 Aug 12
Order Revision / Date: 0
Ordered By: Pam Sword

LINE	ITEM #	DESCRIPTION	QTY	UOM	UNIT PRICE	EXTENDED PRICE	DATE REQUIRED	REF. #
1.	AFE:12167977							
2.	Account code:8755.322							
3.	Please send all invoices to the technical contact listed above.							
4.	All invoices must reference this Purchase Order.							
5.	The Contractor shall use Encana's Electronic Invoicing System to submit all invoices. If Contractor is not registered with Encana E-Invoicing system please submit a paper invoice.							
<hr/>								
1.000	COMMUNICATION TOWER BUILDING AFE/CC.Major.Minor: 50716.2804.020 Cost Center: CDBBU CAPITAL EQUIP INVENTORY		1.00	EA	64,142.3300	64,142.33	17 Oct 12	
2.000	BASEBOARD HEATER AFE/CC.Major.Minor: 50716.2804.020 Cost Center: CDBBU CAPITAL EQUIP INVENTORY		1.00	EA	1,450.0000	1,450.00	17 Oct 12	
TOTAL						65,592.33		

SELLER HAS READ AND AGREES TO BE BOUND BY THE PURCHASE ORDER INCLUDING ENCANA'S TERMS AND CONDITIONS. The Purchase Order shall become a binding agreement upon the Seller signing and returning a written acceptance of the Purchase Order or upon the Seller otherwise acknowledging acceptance of the Purchase Order or commencing performance of the Purchase Order, whichever occurs first. **NOTWITHSTANDING THE FOREGOING, THE TERMS AND CONDITIONS OF ANY MASTER AGREEMENT SIGNED BY SELLER AND ENCANA SHALL TAKE PRECEDENCE OVER THE TERMS AND CONDITIONS OF THIS PURCHASE ORDER.**

ENCANA

NAME: _____

SIGNATURE: _____

DATE: _____

SELLER ACCEPTANCE (PLEASE RETURN A SIGNED COPY)

NAME: _____

SIGNATURE: _____

DATE: _____

Our Quote Number PN30302-REV3

Jul/20/2012

ENCANA CORPORATION
150 - 9 Avenue SW, PO Box 2850
Calgary, Alberta T2P 2S5

Attn: Mr. Garnet Tremere

RE COMMUNICATION TOWER
RESTHAVEN FACILITY

Dear Sir:

Thank you for the invitation to submit a quotation on the above referenced project.
Spartech Manufacturing Ltd. would be pleased to provide the following :

Item	Qty	Description	Unit Price
1	1	COMMUNICATION TOWER BLDG	\$64,142.33
Quoted Net Total \$64,142.33			

Please note that the above assembly will be built as per the attached Bill(s) of Material and subject to the attached Terms & Conditions.

If any additional information is required please contact me by phone at (403) 695-2879 or by fax at (403) 207-0656.

Regards,
SPARTECH MANUFACTURING



Rob Pupulin, P. Eng.

cc: Spartech Tech. Sales - Brian Pollmuller, Ph. (403) 695-2651



COMMUNICATION TOWER BLDG

Qty.	Mfg Part ID	Part Description	Part Specifications
BUILDING & SKID			
1	MB-SERVICES-BUILDING/SKID	SKID & BLDG 2438 W X 3048 DP X 2896 EAVE(MM) / 8' W X 10' DP X 9.5' EAVE	PER DESCRIPTION IN PROPOSAL NOTES
HVAC			
1	MB-SERVICES-HVAC SYSTEM	HVAC UNIT WALL-MOUNTED 2 TONS COOLING / 15KW HEAT 208 OR 460/3/60 POWER	PER DESCRIPTION IN PROPOSAL NOTES
ELECTRICAL			
1	MB-SERVICES-ELECTRICAL	ELECTRICAL MATERIALS AND LABOUR	PER DESCRIPTION IN PROPOSAL NOTES
1	AS-SERVICE-CSA	ELECTRICAL APPROVAL - GENERAL PURPOSE AREA (ETL)	
FREE-ISSUED ITEMS, INSTALLED BY OTHERS OR FIELD			
1	CUSTOMER SUPPLIED	IT RACKS / CONTROL RACKS / SERVER CABINETS SUPPLIED & INSTALLED BY OTHERS	
ENGINEERING & DRAWINGS			
1	CUSTOMER SUPPLIED	ENGINEERING & DRAWINGS BY OTHERS	
MISCELLANEOUS			
Lot	MISC TAGGING	MATERIAL	
Lot	MISC WIRING	MATERIAL	
Lot	MISC MOUNTING	MATERIAL	
Lot	MISC ENGRAVING	MATERIAL	

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Pricing Notes

1. Supply, install and wire Qty. 2,1500W 120V baseboard heaters ... \$1,450 total.
(The HVAC system does not include any baseboard heaters.)

General Technical Notes

1. Deliverables include:
 - Building with electrical "infrastructure" installed and wired.
2. Scope of work is as follows:

Description	Encana	Spartech
Design and generate IFC drawings.	X	
Supply materials.		X
Supply free-issue items as noted in BOM or in notes below.	X	
Install free-issue items as noted in BOM or in notes below.	X	
Manufacture & perform QA test.		X
Redline drawings.		X
Stage at Spartech's facility.	N/A	N/A

3. Area classification is General Purpose.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Detailed Technical Notes

Building & Skid

Building

Building 2438mmW x 3048mmDP x 2896mm Low Eave (8'0" Wide x 10'0" DP x 9'6" Low Eave),
Shed Style Self-Framing Structure (1:12 Slope)

- 22 Ga. Pre Painted Walls and Roof (Stock Colour)
- Pre Painted Flashings and Trim (Stock Colour)
- Encana colours (tan, and dark and metro brown) are considered stock colours.
- 24 Ga. Fluted White Aluminum Liner
- R12 (3") Standard Batt Insulation in the Walls and R35 (9") Standard Batt Insulation in the Roof
- 6 Mil. Poly Vapor Barrier
- Qty. 1, 16 Ga. 3'0" x 7'0" R12 Polyurethane Single Door c/w 16 Ga. Welded Single Door Frame, Hydraulic Closer, 24" x 24" Double Glazed IWG Glass Window, 44TP Von Duprin Panic Hardware, Interior Kick Plate, Weather Stripping, Sweeps and Threshold
- Qty. 1, 10'0" Full Length Eaves Trough c/w Downspout and Elbow
- Qty. 1, 10'0" Long Continuous Ice Rakes
- Qty. 2, 16 Ga. Vertical Wall Support Channels for the Customer Supplied HVAC Unit
- Qty. 2, Framed Openings for the Supply and Return Grills of the Customer Supplied HVAC Unit
- 2" Containment Ring Flashings Included
- P. Eng Drawings and Certificate of Design and Manufacturing Conformance with the NBC 2010 Included

Skid

2438mmW x 3048mmDP (8'0" Wide x 10'0" DP) Structural Steel Skid c/w

- 1/4" Checker Plate Flooring
- 2" Containment Ring Included for the Perimeter of the Skid
- Main Beam Runners Extended at 1'0" at all Four (4) Corners to Provide Lifting Capability (Extension is length-wise, not width-wise.)
- SP7 Surface Preparation (Bush Blast in Lieu of Wheel Clean) c/w One (1) Coat of Zinc Chromate Primer and One (1) Coat of Marine Enamel Top Coat
- R28 (4") Spray Insulation Applied to the Underside of the Skid c/w Class One Fire Retardant Spray Foam (Towerton IS NOT Included)

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Other for Building/Skid

Also included are:

- Building AB schedules.
- Qty. 1, framed opening (Up to 1500mm x 1500mm / 5'0" x 5'0") for a fan, louvre, HVAC cut-out or cable tray cut-out.

Engineering & Drawings for Building/Skid

Included are:

- P. Eng Drawings and Certificate of Design and Manufacturing Conformance with the NBC (National Building Code) 2010 are included.
- Building ABC schedules.
- All buildings are designed and certified under CSA A660-10.

Approximate Building/Skid Weight (Without Electrical Equipment & HVAC)

- 3200 kg / 7000 lbs

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

HVAC

HVAC Unit Scope of Supply

- BARD wall mount Heat/cool
- Model WA24
- 208 or 460/3/60 general electric clarification power
- Nominal 2 tons cooling 12KW heating
- Supply/return grilles (no distribution supply ducting provided)
- Heat/cool stat
- Economizer (to set pressurization air)
- 2" pleated filter @ 30% efficiency
- J Control Module (includes low ambient cooling)

Mechanical Engineering for HVAC

- Heat/Cool calculations
- ABC Schedules
- NO layout drawing - this single unit can be shown on your electrical drawings

HVAC Commissioning

- In Calgary only

HVAC Exclusions

- Heresite coated coils on HVAC unit
- Any auxiliary unit heaters or exhaust fans or relief louvre
- Spare parts

HVAC Notes

- One year warranty labour on HVAC unit is available as an option. Please contact us if this is a requirement.

Approximate HVAC Weight

- 181 kg / 400 lbs

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Electrical Materials and Labour

Electrical work will be complaint with the General Purpose area classification. EMT conduit will be used for wiring work.

Electrical Scope of Supply

- Supply, installation and wiring of Qty. 1 - 70W HPS wall pack c/w integral photocell.
- Supply, installation and wiring of Qty. 2 - 2Lamp 4' industrial strip fixtures.
- Supply, installation and wiring of Qty. 1 - 30kVA 480- 120/208V NEMA 3R transformer.
- Supply, installation and wiring of Qty. 3 - duplex receptacles.
- Supply, installation and wiring of Qty. 1 – 1-pole light switch
- Supply, installation and wiring of Qty. 1 - 30CCT 120/208V 3Ph NEMA3R/12 distribution panel c/w:
 - Qty. 11 – 1P15A breakers
 - Qty. 4 - 1P30A breakers
- Supply, installation and wiring of Qty. 1 - junction box for the termination of the door contact feeds.
- Supply, installation and wiring of Qty. 1 - door contacts.
- Wiring of the HVAC thermostat to the HVAC.

Electrical Exclusions

- Owner-supplied equipment will be field-installed and wired by Others.
- The 480V feeder to the HVAC will be supplied, installed and terminated by Others.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Delivery Considerations

1. Delivery is approximately 12 weeks after receipt of purchase order, based on the following timelines.
 - a. Drawing generation for building/skid and HVAC: 2 weeks.
 - b. Customer approval: 2 weeks.
 - c. Building/skid fabrication: 4 weeks ARAD (After Receipt of Approved Drawings).
 - d. Building erection on the skid: 1 week.
 - e. HVAC delivery: 6 weeks (in parallel with the building/skid activity).
 - f. Electrical Work: 2 weeks.
 - g. Total amount of time required: 12 weeks (Includes critical path items - a, b, e, f.)
2. Delivery will require confirmation after award or at award date.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Documentation Notes

1. The Spartech standard package will include the following documents only.
 - Redlines.
 - Electrical approval – e.g. CSA (if applicable)
 - Datasheets as received from the original manufacturer.
2. All project documentation will be provided in softcopy format – e.g. CDs or electronic files as attachments to an email or as a zip file via FTP or other file transfer utility.
3. Custom or special documentation requirements are extra – e.g. hardcopy binders, special tabs, write-ups etc.
4. Documentation for approval will be submitted only in softcopy format in PDF format. One revision cycle is included. Additional revision cycles are extra. Final documentation will be submitted in softcopy format unless Customer has purchased the hardcopy option.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

Terms & Conditions of Sale

1. Any resulting order will be in accordance with Spartech Manufacturing Terms & Conditions. Please refer to our website at <http://www.spartechmanufacturing.com/terms.aspx>
2. Unless noted, prices are quoted in Canadian dollars. Taxes are not included and applicable GST will be charged at current rates.
3. Terms of payment are as follows:
 - For domestic shipments: Net 30 days, on approved credit (OAC).
 - For international shipments: Payments must be received prior to shipment, either via wire transfer or other certified means.
4. For orders greater than \$100K, progress payments shall apply as follows.
 - 30% upon order acknowledgment
 - 30% upon receipt of major materials
 - 30% upon completion of fabrication and ready for customer inspection
 - 10% upon submission of documentation
5. Panels shall be invoiced upon ready for shipment. If extended customer staging/testing or extended storage is required, they shall be invoiced upon ready for customer acceptance testing or being placed into storage.
6. Multiple panel fabrication may be split shipped and invoiced based upon project duration.
7. Freight: Ex Works Spartech, Calgary. Freight billed at cost.
8. Delivery is estimated based on material availability and subject to shop load at time of order, as well as timely receipt of IFC drawings, wire tagging lists and free-issue material. Actual schedule to be formulated at time of award and receipt of all customer supplied material and documentation.
9. Our bid is valid for 30 days from the date of quotation.
10. Prices herein specified are applicable to the quantities as covered by this quotation. Any change in quantity or elimination of one or more items may require a revision to the prices quoted. Only items and quantities on the attached bill of material have been quoted.
11. Panel will bear electrical approval for the area classification noted above provided that all free-issue material is certified to Canadian standards. All cost associated with obtaining special inspection approval on customer-supplied material will be the responsibility of the purchaser. CSA will only be applicable for panels that contain wiring.
12. Warranty: Spartech Manufacturing will assume responsibility only for components and workmanship supplied by same. Component warranty shall consist of the standard 12-month warranty as supplied by the component manufacturer. Ex Works Spartech, Calgary.

Pricing Notes, Technical Notes, Documentation Notes and Terms & Conditions of Sale

13. All material supplied on a free-issue basis must be sent prepaid to Spartech Manufacturing and must be tagged with the customer purchase order number and/or the Spartech work order number.
14. Interim storage fees shall be applied if the fabrication schedule is delayed beyond 2 weeks due to missing customer supplied material, drawings, wire tagging lists, delayed customer inspection, delayed shipping release etc. An updated project delivery schedule will be supplied upon receipt of material and based on current shop loading.
15. Customer to supply all drawings for panel fabrication.
16. No software, programming or commissioning services have been included in this proposal.
17. Schedule milestones: All customer-approved design documentation, drawings and free-issued material must be received upon agreed-upon milestone to permit the commencement of manufacturing on the scheduled date. Delays in obtaining customer-supplied materials and/or drawings may result in delay of schedule or express delivery charges.
18. Restocking charges will apply on cancelled/returned orders.
19. Manual and data sheets will be supplied only as received from the component manufacturer of the supplied material. If additional documentation is required (usually defined in the Vendor Data Requirements (VDR), charges shall apply for additional documentation such as CAD Drawings, Part Data sheets, Installation Manuals, Spare Parts lists, QA/QC manuals, Inspection & Test Plans, Material Traceability Report's (MTR), Positive Material Identification (PMI) and Manufacturers Record Book's/CD's (MRB).
20. All work will be performed in accordance with Spartech Manufacturing standard practice and materials.
21. Prices include standard packing material; bubble wrap and cardboard. Wooden crating is available at extra cost.
22. Storage fees may apply to equipment left at our facility past the intended ship date. Extended storage may be billed separately and may also include a finance charge of 1% per month on outstanding balances.
23. Price includes staging space for 2 weeks after panel completion.
24. Spartech Manufacturing's standard QA/QC check includes; point to point wire verification, pressure testing (if applicable), DC power check of lights, fans and switches, to the buyers supplied drawings. Additional factory acceptance testing, programming/simulations are not supplied by Spartech with the standard quotation.
25. Full staging and testing facilities are available. Spartech Manufacturing would be pleased to provide a complete staging and testing proposal if required.

PO Box 2850
Calgary, Alta T2P 2S5

EnCana
Purchase Order

Phone: (403) 645-2000
Fax: (403) 645-3400

Seller: Galvanic Applied Sciences Inc.
7000 Fisher Road SE
Calgary, AB
Canada T2H 0W3

Phone: (403) 252-8470
Fax: (403) 255-6287

PO No.: 380700-002

This number must appear on all correspondence.

Rev. No.: 0 Cumulative
Rev.Date: 08/02/2011

Page 1 of 4

Attention: Ryan Fahl

Ship To: HOLD FOR WRITTEN INSTRUCTIONS
FROM TARTAN ENGINEERING LTD.

Invoice To: EnCana
c/o Tartan Engineering Ltd. operating as PSN
via: "OpenInvoice" Billing System
for information call, (403)645-3113
Attn: Nova Lee

Initial Order Date	Scheduled Deliver	1st Vendor Dwa Due Date	Shipping Point:	Shipping Terms or Incoterm Status:	Invoice Payment Terms:
08/02/2011	15/03/2011		Calgary	FCA	Net 30 Days
End Use:	Route VIA:	Project Title: 10-08 to 10-71-8 W6 Jumper Line	Seller's Quotation Reference:		Q-2011.01.24RF
TBA		Location: 10-08-71-8 W6			

Please furnish goods and/or services described below subject to the terms and conditions of this purchase order and all attachments

Item#	Quantity	Description	Unit Price	Total
1	1.00 Each	"Confirmation Only" 10-8 to 10-10-71-8 W6 Jumper Line PLCG Gas Chromatograph PLGC II Natural Gas Chromatograph/ Component Analyzer 11144250 3760-322 AB 7J 7J27 M Class 1 Div 1 Group CD - 3 min analysis for H2S Tag Item: AIT-001 Scheduled Delivery: 15/03/2011 PT # GCCP-D1	CAD	18,500.00
2	1.00 Each	Low Pressure Single Stream Sample System 11144250 3760-322 AB 7J 7J27 M C/w regulator, indicating rotometer, associated fittings and tubing. NOTE: Max sample inlet 250 psi, Max Helium inlet 250 psi, Max calibration inlet 100 psi Tag Item: AIT-001 Scheduled Delivery: 15/03/2011 PT# LPSS		2,536.00
3	1.00 Each	Guardian Liquid Eliminator Membrane 11144250 3760-322 AB 7J 7J27 M with integrated Automatic Liquid Shut-off. 316SS Construction. WP 1000psi (complete with a VCO fitting for attachment to the outlet of the probe regulator after insertion is complete)		1,375.00

Verbal Order Placed:		Total Value This Purchase Order	61,890.00 (All Taxes Extra)	Direct All Corresp. to: Phone: (403) 716-6102 Fax: (403) 232-8298	Landy Perez
Delivery:	Six Weeks				
Required Before:	March 15, 2011				

VENDOR/ SELLER ACKNOWLEDGMENT
Please sign and return to 'Invoice To' address above

PER _____ Date: _____
Ryan Fahl

PER _____
Rob Beckner
Authorized Representative of Purchaser
PER _____
Dan White/Levie Mendioro/CC

Project No.: 380700		PO No.: 002 - PLCG Gas Chromatograph	Rev. No. 0	Rev.Date: 08/02/2011	Page 2 of 4
Item#	Quantity	Description	Unit Price	Total	
		Tag Item: AIT-001 PT# ALG	Scheduled Delivery: 15/03/2011		
4	1.00 Each	Back Panel Standard Steel painted backpan 27" x 33" Tag Item: AIT-001 PT # BP	11144250 3760-322 AB 7J 7J27 M	365.00	365.00
5	1.00 Each	Genie Membrane Probe Regulator (Model # GPR-2NG) sample probe with branch tee fittings, associated gage and relief fitting. Standard length 4". Other lengths available. consult factory. Tag Item: AIT-001 PT #PGEN	11144250 3760-322 AB 7J 7J27 M	2,200.00	2,200.00
6	2.00 Each	GO CYL-20 Dual Stage SS Bottle Regulator includes in/out gauges & CGA fitting Tag Item: AIT-001 PT #CYL2	11144250 3760-322 AB 7J 7J27 M	1,338.00	2,676.00
7	1.00 Each	Helium UHP w/ Cylinder Tag Item: AIT-001 PT #HEGAS	11144250 3760-322 AB 7J 7J27 M	893.00	893.00
8	1.00 Each	Calibration Gas (1 part mix) w/ Cylinder Tag Item: AIT-001 PT # GCGAS	11144250 3760-322 AB 7J 7J27 M	2,100.00	2,100.00
9	1.00 Each	Crating Tag Item: AIT-001	11144250 3760-322 AB 7J 7J27 M	300.00	300.00
10	2.00 Each	Data Manuals Any drawings or data manuals for AIT-001/AIT-002 provided are to be sent to the following:	11144250 3760-322 AB 7J 7J27 M	0.00	0.00

Project No.: 380700		PO No.: 002 - PLCG Gas Chromatograph	Rev. No. 0	Rev.Date: 08/02/2011	Page 3 of 4
Item#	Quantity	Description		Unit Price	Total
		<p>Tag Item: AIT-001 Encana c/o PSN #700, 110-12th Ave SW Calgary, AB T2R 0G7 Attn: Procurement (403) 234-6300</p>	Scheduled Delivery: 15/03/2011		
11	1.00 Each	<p>PLGC II Natural Gas Chromatograph/ Component Analyzer 11144250 3760-322 AB 7J 7J27 M Class 1 Div 1 Group CD - 3 min analysis for H2S</p>		18,500.00	18,500.00
		<p>Tag Item: AIT-002 PT # GCCP-D1</p>	Scheduled Delivery: 15/03/2011		
12	1.00 Each	<p>Low Pressure Single Stream Sample System 11144250 3760-322 AB 7J 7J27 M C/w regulator, indicating rotometer, associated fittings and tubing. NOTE: Max sample inlet 250 psi, Max Helium inlet 250 psi, Max calibration inlet 100 psi</p>		2,536.00	2,536.00
		<p>Tag Item: AIT-002 PT# LPSS</p>	Scheduled Delivery: 15/03/2011		
13	1.00 Each	<p>Guardian Liquid Eliminator Membrane 11144250 3760-322 AB 7J 7J27 M with integrated Automatic Liquid Shut-off. 316SS Construction. WP 1000psi (complete with a VCO fitting for attachment to the outlet of the probe regulator after insertion is complete)</p>		1,375.00	1,375.00
		<p>Tag Item: AIT-002 PT# ALG</p>	Scheduled Delivery: 15/03/2011		
14	1.00 Each	<p>Back Panel Standard 11144250 3760-322 AB 7J 7J27 M Steel painted backpan 27" x 33"</p>		365.00	365.00
		<p>Tag Item: AIT-002 PT # BP</p>	Scheduled Delivery: 15/03/2011		
15	1.00 Each	<p>Genie Membrane Probe Regulator 11144250 3760-322 AB 7J 7J27 M (Model # GPR-2NG) sample probe with branch tee fittings, associated gage and relief fitting. Standard length 4". Other lengths available. consult factory.</p>		2,200.00	2,200.00
		<p>Tag Item: AIT-002 PT # PGEN</p>	Scheduled Delivery: 15/03/2011		
16	2.00 Each	<p>GO CYL-20 Dual Stage SS Bottle Regulator 11144250 3760-322 AB 7J 7J27 M includes in/out gauges & CGA fitting</p>		1,338.00	2,676.00
		<p>Tag Item: AIT-002</p>			

Project No.: 380700		PO No.: 002 - PLCG Gas Chromatograph	Rev. No. 0	Rev.Date: 08/02/2011	Page 4 of 4
Item#	Quantity	Description		Unit Price	Total
		PT #CYL2	Scheduled Delivery: 15/03/2011		
17	1.00 Each	Helium UHP w/ Cylinder	11144250 3760-322 AB 7J 7J27 M	893.00	893.00
		Tag Item: AIT-002	Scheduled Delivery: 15/03/2011		
		PT #HEGAS			
18	1.00 Each	Calibration Gas (1 part mix) w/ Cylinder	11144250 3760-322 AB 7J 7J27 M	2,100.00	2,100.00
		Tag Item: AIT-002	Scheduled Delivery: 15/03/2011		
		PT # GCGAS			
19	1.00 Each	Crating	11144250 3760-322 AB 7J 7J27 M	300.00	300.00
		Tag Item: AIT-002	Scheduled Delivery: 15/03/2011		
20	1.00 EACH	INSTRUMENT ENCLOSURES	11144250 3760-322 AB 7J 7J27 M	0.00	0.00
		Interconnect Drawings and Calibration Certificate as per Q-2011.01.24.RF			
		Scheduled Delivery: 15/03/2011			
				Sub Total	61,890.00
				Value Added Tax (VAT/ GST)	3,713.40
				State/ Province Tax	
				Grand Total	65,603.40
				Varies Per Item	



Suite #700, 110 - 12th Ave. SW
Calgary, AB T2R 0G7
Phone (403) 234-6300
Facsimile (403) 232-8298
www.psnworld.com

Procurement Service Requisition

Cover Sheet

Client: EnCana

Project No: 380700

Project Name: 10-8 to 10-10 Jumper

RFP/RFQ No: 380700-002 PO

Location: 10-08-71-08-W6M

AFE No:

1. REQUEST FOR: RFP - Request for Proposal
 RFQ - Request for Quotation

P.O. - Purchase Order
 P.O. REVISION to existing PO # _____

REQUEST ORIGINATOR: Dan White

CLIENT PO# or SAP# (if known) _____

2. GENERAL DESCRIPTION: 2 x PLGC II Gas Chromatograph

3. RFP/RFQ CLOSE DATE: _____

TECHNICAL CONTACT: Dan White

Phone #: 403-234-6387

REQ'D DELIVERY DATE: 15-Mar-11

COMMERCIAL CONTACT: Nova Gillis

Phone #: 403-234-6396

4. FOB: _____

SHIP TO ADDRESS: TBD

SHIP ATTN: _____

5. LIST OF APPLICABLE DOCUMENTS:

FP#/RFQ#/Quote#: Q-2011.01.24.RF

Datasheet#: AIT-001 Rev 0, AIT-002 Rev 0

Specifications: _____

Spec deviation: _____

Drawings: Manuals, Interconnect Drawings, Calibration Certificate,

Other: _____

Inspection Level Level 0 - No Quality Surveillance. Expedite Delivery Only



Suite #700, 110 - 12th Ave. SW
Calgary, AB T2R 0G7
Phone (403) 234-6300
Facsimile (403) 232-8288
www.premierworld.com

Procurement Service Requisition

Internal Notes

Client: EnCana
Project Name: 10-8 to 10-10 Jumper
Location: 10-08-71-08-W6M

Project No: 380100
RFP/RFQ No: 380700-002 PO
AFE No:

6. PREFERRED VENDOR LIST:

1. **Galvanic Applied Sciences**
Address: 7000 Fisher Road SE
Calgary, Alberta
Contact: Ryan Fahl
Phone #: 403-252-8470
Fax #: _____
E-Mail: rfahl@galvanic.com

2. _____
Address: _____

Contact: _____
Phone #: _____
Fax #: _____
E-Mail: _____

3. _____
Address: _____

Contact: _____
Phone #: _____
Fax #: _____
E-Mail: _____

7. APPROVALS AND ROUTING:

Req'd	Name
Originator <input checked="" type="checkbox"/>	Dan White <i>DW</i>
Process <input type="checkbox"/>	
Mechanical <input type="checkbox"/>	
Inst. & Control <input checked="" type="checkbox"/>	Dan White <i>DW</i>

	Req'd	Name
Electrical	<input type="checkbox"/>	
Civil	<input type="checkbox"/>	
Project Manager	<input checked="" type="checkbox"/>	Levie Mendioro
Construction	<input type="checkbox"/>	

8. NOTES/COMMENTS:

Form No: PO.F.001
Rev/Date: C1-22-01-2010 (Previously PO.F.001)
Page 2 of 2

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HEAD OFFICE: 7000 Fisher Road, S.E., Calgary, Alberta, Canada T2H 0W3 PHONE: (403) 252-8470 FAX: (403) 255-6287

QUOTATION # Q-2011.01.24.RF

ATTENTION: Dan White

January 24, 2011

PSN World c/o EnCana Corp
Calgary, AB
Phone: 403 234 6300
Fax:
Email: dan.white@psnworld.com

Dan,

I am pleased to provide you with a quotation for **two (2) PLGCII Analyzers**.

The attached quote includes:

- Proposed Measurement and Analysis
- Analyzer Description and Specifications
- Analyzer Price Quote
- Terms and Conditions for Sale of Equipment

If you have any additional questions please feel free to contact me.

Yours sincerely,

Ryan Fahl
Canadian Sales Manager
Galvanic Applied Science, Inc.
Tel: 403 252 8470
Cell: 403 875 1264
Email: rfahl@galvanic.com

PROPOSED MEASUREMENT AND ANALYSIS

The tables below contain the information for the proposed measurement.

Instrument Tag #	Project 380700 Tags: AIT-001, AIT-002
Installation Site & Location	10-8 to 10-10 Jumper LSD:10-08-71-08-W6M
Application	Blending
Component(s) Measured	H2S
Measurement Range	0-10%
Power	24 VDC Power-75 watts start-up, 50 watts running
Electrical Classification	Class 1 Div 1
Sample System	Yes
Other Options	BP, Probes, Regulators and Cal/Carrier Gas, Liquid Shut-off

ANALYZER PRICE QUOTE AIT-001

PLGC II Natural Gas Chromatograph			
		Canadian	Extended
		CDN \$	CDN \$
Analyzer Type			
✓ CCP-D1	1 PLGC II Natural Gas Chromatograph / Component Analyzer (Class 1 Division 1 Group CD) - 3 minute analysis for H ₂ S	\$18,500	\$18,500
Sample System			
✓ EPSS	1 Low Pressure single stream sample system c/w regulator, indicating rotometer, associated fittings and tubing. NOTE: Max.sample inlet <u>250 psi</u> , Max Helium inlet <u>250 psi</u> , Max calibration inlet <u>100 psi</u> .	\$2,536	\$2,536
✓ ALG	1 The Guardian' Liquid Eliminator Membrane with integrated Automatic Liquid Shut-Off. (316SS Construction. WP 1000psi (Complete with a VCO fitting for attachment to the outlet of the probe regulator after insertion is complete).	\$1,375	\$1,375
Mounting and Enclosure			
✓ BP	1 Back panel Standard: Steel painted backpan 27" x 33"	\$365	\$365
Probes and Other Accessories			
✓ PGEN	1 'Genie' membrane probe regulator (Model # GPR-2NG) sample probe with branch tee fittings, associated gage and relief fitting. Standard length 4". Other lengths available. Consult factory.	\$2,200	\$2,200
✓ CYL2	2 GO CYL-20 dual stage SS bottle regulator (includes in/out gauges & CGA fitting)	\$1,338	\$2,676
✓ HEGAS	1 Helium UHP w/ Cylinder	\$893	\$893
✓ OCGAS	1 Calibration Gas (1 part mix) w/ Cylinder	\$2,100	\$2,100
	Analyzer Total		\$30,644
	Crating	\$300	\$300
	Grand Total		\$30,944

ANALYZER PRICE QUOTE AIT-002

PLGC II Natural Gas Chromatograph			
Analyzer Type		Canadian	Extended
		CDN \$	CDN \$
GCCP-D1	1 PLGC II Natural Gas Chromatograph / Component Analyzer (Class 1 Division 1 Group CD) - 3 minute analysis for H₂S	\$18,500	\$18,500
Sample System			
LPSS	1 Low Pressure single stream sample system c/w regulator, indicating rotometer, associated fittings and tubing. NOTE: Max.sample inlet <u>250 psi</u> , Max Helium inlet <u>250 psi</u> , Max calibration inlet <u>100 psi</u> .	\$2,536	\$2,536
ALG	1 The Guardian' Liquid Eliminator Membrane with integrated Automatic Liquid Shut-Off. (316SS Construction, WP 1000psi (Complete with a VCO fitting for attachment to the outlet of the probe regulator after insertion is complete).	\$1,375	\$1,375
Mounting and Enclosure			
BP	1 Back panel Standard: Steel painted backpan 27" x 33"	\$365	\$365
Probes and Other Accessories			
PGEN	1 'Genie' membrane probe regulator (Model # GPR-2NG) sample probe with branch tee fittings, associated gage and relief fitting. Standard length 4". Other lengths available. Consult factory.	\$2,200	\$2,200
CYL2	2 GO CYL-20 dual stage SS bottle regulator (includes in/out gauges & CGA fitting)	\$1,338	\$2,676
HEGAS	1 Helium UHP w/ Cylinder	\$893	\$893
GCGAS	1 Calibration Gas (1 part mix) w/ Cylinder	\$2,100	\$2,100
Analyzer Total			\$30,644
Crating			\$300
Grand Total			\$30,944

The following quotation is valid for 90 days and subject to the 'Terms and Conditions for Sale of Equipment' provided herein.

Confidential Information: The prices, product specifications or other information contained in this quote are strictly confidential and are supplied on the understanding that they will be held confidentially and not disclosed to third parties without the prior written consent of Galvanic Applied Sciences, Inc

Customer Requirements: Customer is responsible for providing all facilities and services to the analyzer. For the **PLGC II Natural Gas Chromatograph** these responsibilities include:

- Suitable mounting and/or support for the analyzer, as per Galvanic's instructions and specifications. See analyzer operation and maintenance manual for details.
- All required tubing to / from analyzer
- Supply and installation of electrical lines
- Supply and installation of conduit and signal cable between the analyzer location and the control room and / or Customer supplied control system
- Supply and installation of heat tracing of sample line and vent line, if required
- Depending on the sample location selected for the analyzer system and / or the operating environment, weather/ sun shade protective panel, shelter or temperature controlled analyzer house

ANALYZER DESCRIPTION AND SPECIFICATIONS

Galvanic's PLGC II Natural Gas Chromatograph is designed to measure up to 8 streams of BTU and / or components in natural gas. Specifically the instrument is able to provide:

- Calculated Values: Heating Value/CV/BTU (GPA2172-96, 2145-03), Specific Gravity (AGA 8), Compressibility (AGA 8) and Wobble Index
- Component measurements (mol %): C1, C2, C3, ₁C4, ₁C5, _NC5, C6+, C6, C7+, N₂, CO₂, CO, O₂ & H₂S

The PLGC II also has a report generating capability for providing further calculated values.

The PLGC II Natural Gas Chromatograph is *compact* and *rugged* (uses low temp TCD with no burnout on loss of carrier). It is also inexpensive to operate because the unit uses *no instrument air* and *modest amounts of both power and carrier gas*.

The standard PLGC II Natural Gas Chromatograph is equipped with sample flowmeter, auto-calibration solenoid and software, and custom application configuration. All units come standard with one (1) operation manual and serial cable. Options include sample systems and enclosures.

Specifications for a standard PLGC II Natural Gas Chromatograph are:

PERFORMANCE		INSTRUMENT SPECIFICATIONS	
Range:	0-1000 ppm to 100% for individual components	Size	Class 1, Div 2 version: 14" H x 12" W x 8" D Class 1, Div 1 version: 30" H x 16" W x 9" D
Components:	16 maximum	Weight	Class 1, Div 2 version: 35 lbs Class 1, Div 1 version: 50 lbs
Streams:	8 plus 1 calibration	Electrical Classifications	CSA C/US Certified - Class 1, Div 1, Group BCD - Class 1, Div 2, Group BCD Temp code T3
Response:	4 minutes for C1 to C6+, N ₂ , CO ₂ 5 minutes for C1 to C7+, N ₂ , CO ₂ 3 minutes for H ₂ S and CO ₂ , depending on background composition For other measurements / times please consult factory	Columns	1/4 - 1/16" stainless steel packed column (application dependent)
Linearity:	1% for individual components	Valves	1/4 valves - Uses Valco Model DV22 10-port / Model DV22 6-port
Repeatability:	±1 BTU or 0.1%	Detector	Low Temperature TCD
OPERATION PARAMETERS		Oven	Stainless steel oven using airless heat-sink. Designed to maintain consistent temperature
Ambient temp.	-10-40° C (Optional enclosure: -40° C - 55° C)	Electronics	Galvanic DIMAC dual processor platform utilizing 32 bit ARM7 CPU, advanced I/O processor and 6MByte flash memory. Real time clock with battery backup.
Humidity	0-95% non-condensing	Software	Galvanic DIMAC software. DIMAC is a Windows-based, graphical user interface (GUI) software used for analyzer configuration and monitoring.
Power Consumption	50 watts @ 24 VDC (Nominal Operation), 75 watts @ 24 VDC (startup), 110 VAC operation (optional)	Data Logging & Archiving	Stores up to 10,000 items. User can set parameters such as time (hourly, daily, weekly, monthly, each analysis) and averages (hourly, daily, weekly, monthly and yearly, each analysis)
Carrier Gas	UHP helium @ 10 cc/min @ 60 PSI. Approximately 4-5 months using of 300 ft ³ bottle. Hydrogen carrier option available, consult factory	Reports	Can generate report of calculated values including BTU value, relative density, GPM, vapor pressure, specific gravity and liquid volume % for each component, plus other totalized readings.
Sample Flow Rate	10 -100 PSI clean, dry gas @ 50 cc/min	OPTIONS	
COMMUNICATIONS / INTERFACE		High pressure sampling system, low pressure sample system, custom sample system, and enclosure/cabinets (heated enclosure)	
Outputs	4 - relays, user selectable for alarm or fault (SPDT, 5 amps, 120 VAC) 4 - 4-20 mA (isolated), up to 24 more optional. Freely assignable to BTU, specific gravity, compressibility, component concentration or other measured or calculated value 1 - RS-232 isolated serial port 1 - RS-485 isolated serial port 1 - RS-232 non-isolated serial port Modbus communication on all ports		
Inputs:	6 - dry contacts 2 - wet contacts		
Operator Interface	248x64 LCD Screen 2 visual indicators (LED) for quick status Remote PC GUI		



#700, 110 - 12 Ave. SW
Calgary, Alberta
PH: (403) 234-6387
FAX: (403) 232-8298

GAS CHROMATOGRAPH

DATASHEET NUMBER

AIT-001

Rev 0 Page 1 of 1

Project: EnCana 10-8 to 10-10 Jumper

Project No. 380700

AFE No. :

GENERAL		Company/Dept.	REVISIONS	BY	Chk'd	App'd	Date
Process Data By:			Date	No	Description		
Data Sheet By:	I&C		22-Jan-11	A	Issued for Proposal	LM	
	I&C		01-Feb-11	0	Issued for Purchase	DW	MA
1	Tag Number		AIT-001				
2	Equipment No.		~~				
3	Service		10-8 to 10-10 Jumper H2S Analysis				
4	Line Number		P-311-DSC-4"-38H				
5	Line Size - Schedule		4" x Sch 80				
6	P&D		PS00472A				
7	Sour Service		Yes				
8	Design Pressure / Temperature		250 psig / -10 to 40°C				
9	Area Classification		Class 1 Div 1				
10	Type		Chromatograph				
11	Detector Type		TCD				
12	Function		H2S Analysis				
13	Fuel Gas	Carrier Gas	~~	Helium			
14	Range		0 - 10% H2S				
15	Calibration	Turndown	1% of full range				
16		Gas Type	Yes (Note 2)				
17	Repeatability	Accuracy	0.10%				
18	Response Time Max		5 min				
19	Sensitivity	Drift	~~	~~			
20	Output		4-20 mA				
21		Input	6 dry/2 wet				
22	Contacts	Output	4 relays				
23		Type	SPDT				
24		Rating	5 A @ 120 VAC				
25	Communication		Modbus				
26	Indication		LCD Screen				
27	Calibration		Auto Cal				
28	Process Connection		1/4" bulkhead swagelock tube				
29	Enclosure		Not WP Rated				
31	Power Supply	Watts	24 VDC	75 W @ 24 VDC			
32	Cable Type						
33	Configuration Interface		Remote PC GUI				
34							
35	Sample Conditioning System		Yes				
36	Number of Streams		1				
37	Drawing Number		~~				
38	Sample Switching Valves		Yes - Auto Cal				
39	Sample Transport Tubing		1/4" 316 SS seamless				
40		Model #	Genie GPR-2NG				
41	Sample Probe	In Conn.	3/4" NPT				
42		Out Conn	1/4" NPT				
43		Press/Temp Rating	3500 PSI / 85°C				
44		Insertion Length	4"				
45							
46							
47	Vapourizing Regulator		No				
48	Sample Pump		No				
49	Eductor		No				
50	Liquid Knock out /shut off		Yes				
51	Indicating Rotameter		Yes				
52							
53							
54							
55							
PROCUREMENT							
98	Purchase Order No.						
99	Manufacturer		Galvanic Applied Science				
100	Model No.		PLGC II				
101	Vendor		Galvanic Applied Science				
102	Electrical Approval		Class 1 Div 1 Groups BCD T3				
103	CRN		Alberta				
104	Dim./ Interconnect Dwgs.		Yes				
105	Manuals		Yes				
106	Calibration Certificate		Yes				

NOTES:

- The Instruments and Accessories shall be supplied with 316 SS tags.
- 5% H2S cal Gas required



#700, 110 - 12 Ave. SW
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PH: (403) 716-6104
FAX: (403) 232-8298

GAS CHROMATOGRAPH

DATASHEET NUMBER

AIT-002

Rev 0

Page 1 of 1

Project: EnGana 10-8 to 10-10 Jumper

Project No. 380700

AFE No. :

		Company/Dept.	REVISIONS							
		Date	No	Description		BY	Chk'd	App'd	Date	
Process Data By:		I&C	18-Jan-11	A	Issued for Proposal	LM				
Data Sheet By:		I&C	01-Feb-11	0	Issued for Purchase	DW	MS			
GENERAL	1	Tag Number	AIT-002							
	2	Equipment No.	~							
	3	Service	10-8 to 10-10 Jumper H2S Analysis							
	4	Line Number	P-313-DSC-4"-38H							
	5	Line Size - Schedule	4" x Sch 80							
	6	P&ID	PS00472A							
	7	Sour Service	Yes							
	8	Design Pressure / Temperature	250 psig/-10 to 40°C							
	9	Area Classification	Class 1 Div 1							
	10	Type	Chromatograph							
ANALYZER	11	Detector Type	TCD							
	12	Function	H2S Analysis							
	13	Fuel Gas	Carrier Gas	~	Helium					
	14	Range	0 - 10% H2S							
	15	Calibration	Turndown							
	16	Gas Type	Yes (Note 2)							
	17	Repeatability	Accuracy	0.10%						
	18	Response Time Max		5 min						
	19	Sensitivity	Drift	~	~					
	20	Output		4-20 mA						
SAMPLE SYSTEM	21	Contacts	Input	6 dry/2 wet						
	22		Output	4 relays						
	23		Type	SPDT						
	24		Rating	5 A @ 120 VAC						
	25	Communication		Modbus						
	26	Indication		LCD Screen						
	27	Calibration		Auto Cal						
	28	Process Connection		1/4" bulkhead swagelock tube						
	29	Enclosure		Not WP Rated						
	31	Power Supply	Watts	24 VDC	75W @ 24 VDC					
ACCESSORIES	32	Cable Type								
	33	Configuration Interface		Remote PC GUI						
	34									
	35	Sample Conditioning System		Yes						
	36	Number of Streams		1						
	37	Drawing Number		~						
	38	Sample Switching Valves		Yes - Auto Cal						
	39	Sample Transport Tubing		1/4" 316 SS seamless						
	40	Sample Probe	Model #	Genie GPR-2NG						
	41		In Conn.	3/4" NPT						
	42		Out Conn	1/4" NPT						
	43		Press/Temp Rating	3500 PSI / 85°C						
PROCUREMENT	44	Insertion Length		4"						
	45									
	46									
	47	Vapourizing Regulator		No						
	48	Sample Pump		No						
	49	Eductor		No						
	50	Liquid Knock out /shut off		Yes						
	51	Indicating Rotameter		Yes						
	52									
	53									
	54									
	55									

NOTES:

1. The Instruments and Accessories shall be supplied with 316 SS tags.
2. 5% H₂S cal Gas required

PO Box 2850
Calgary, Alta T2P 2S5

EnCana
Purchase Order

Phone: (403) 645-2000
Fax: (403) 645-3400

Seller: Galvanic Applied Sciences Inc.
7000 Fisher Road SE
Calgary, AB
Canada T2H 0W3

Phone: (403) 252-8470
Fax: (403) 255-6287

PO No.: 380700-012

This number must appear on all correspondence.

Rev. No.: 0 Cumulative
Rev.Date: 20/06/2011

Page 1 of 2

Attention: Ryan Fahl

Ship To: HOLD FOR WRITTEN INSTRUCTIONS
FROM PSN

Attn: -

Invoice To: EnCana
c/o Tartan Engineering Ltd. operating as PSN
via: "OpenInvoice" Billing System
for information call, (403)645-3113
Attn: Encana c/o PSN

Initial Order Date 20/06/2011	Scheduled Delivery	1st Vendor Dwg Due Date	Shipping Point: Calgary, AB	Shipping Terms or Incoterm Status: FCA	Invoice Payment Terms: Net 30 Days
----------------------------------	--------------------	-------------------------	--------------------------------	---	---------------------------------------

End Use: To Be Advised	Route VIA: TBA	Project Title: 10-08 to 10-71-8 W6 Jumper Line Location: 10-08-71-8 W6	Seller's Quotation Reference: Q-2011.06.13.RF
---------------------------	-------------------	---	--

Please furnish goods and/or services described below subject to the terms and conditions of this purchase order and all attachments

Item#	Quantity	Description	Unit Price	Total	
1	1.00 EA	<p>"Confirmation Only" 10-8 to 10-10-71-8 W6 Jumper Line Analyzer Cabinet</p> <p>Cabinet to house qty (2) PLGCI H2S Analyzers (AIT-001/ 002) 11144250 8760.442 AB 1S 1S19 M</p> <p>Measurement and Analysis: - Measurement Range: 0-10% - Power: 110 / 220 AC - Electrical Classification: Div 1</p> <p>Enclosure: - 72" x 72" x 24" NEMA 4 Powder Coated Steel Enclosure - R5 foam and heat reflective wrapping insulation</p> <p>Electrical: - Qty (1) Catadyne Heater 1.22 KW Model W1012 - Qty (2) NEMA 4 Junction Boxes - Qty (4) Disconnect Switches - Qty (2) 5 W/ft heat trace lines for samples - Qty (1) Net Safety H2S Detector</p> <p>Conduit system will be rigid aluminum: Enclosure Interior: Class 1 Division 1 Group C&D Enclosure Exterior: Class 1 Division 2 Group C&D</p>	CAD	39,200.00	39,200.00

Verbal Order Placed: Delivery: 6-8 Weeks Required Before: August 5, 2011	Total Value This Purchase Order (All Taxes Extra) 40,450.00	Direct All Corresp. to: Nova Gillis Phone: (403) 234-6396 Fax: (403) 232-8298
--	--	---

VENDOR/ SELLER ACKNOWLEDGMENT Please sign and return to 'Invoice To' address above PER _____ Date: _____ Ryan Fahl		PER Rob Beckner Rob Beckner Authorized Representative of Purchaser PER Dan White/ Damodar Singh/ Ip Dan White/ Damodar Singh/ Ip
--	--	--

Digitally signed by Rob Beckner
DN:cn=Rob Beckner,o=encana.ca,
email=rob.beckner@encana.com,c=CA
Date: 2011-06-21 11:31:52 -06'00'

Project No.: 380700		PO No.: 012 - Analyzer Cabinet	Rev. No. 0	Rev.Date: 20/06/2011	Page 2 of 2
Item#	Quantity	Description		Unit Price	Total
		Instrumentation: Supply and install 316 seamless SS tube and Swagelok 316 SS fittings for: - Qty (2) Sample lines - Qty (2) Calibration lines - Qty (2) Carrier lines - Qty (2) Flare vents			
2	1.00	Lighting EA Supply and install Qty (1) Class 1 Div 1 150W incandescent fixture w/ switch	11144250 8760.442 AB 1S 1S19 M	1,250.00	1,250.00
3	1.00	Documentation EA Please ship all documentation to: PSN 700, 110-12th Ave SW Calgary, AB T2R 0G7 ATTN: Procurement	11144250 8760.442 AB 1S 1S19 M	0.00	0.00
				Sub Total Value Added Tax (VAT/ GST) State/ Province Tax Grand Total	40,450.00 5.00 % 2,022.50 42,472.50



#700, 110 - 12 Ave. SW
Calgary, Alberta
PH: (403) 234-6387
FAX: (403) 232-8298

GAS CHROMATOGRAPH

DATASHEET NUMBER

AIT-001

Rev 0

Page 1 of 1

Project: EnCana 10-8 to 10-10 Jumper

Project No. 380700

AFE No. :

NOTES:

1. The Instruments and Accessories shall be supplied with 316 SS tags.
2. 5% H₂S cal Gas required



#700, 110 - 12 Ave. SW
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GAS CHROMATOGRAPH

DATASHEET NUMBER

AIT-002

Rev 0

Page 1 of 1

Page 1 of 1

Project: EnCana 10-8 to 10-10 Jumper

Project No. 380709

AFE No. 2

		Company/Dept.	REVISIONS		No	Description		BY	Chkd	App'd	Date	
Process Data By:		I&C		18-Jan-11	A	Issued for Proposal		LM				
Data Sheet By:		I&C		01-Feb-11	0	Issued for Purchase		DW	DW	MS		
GENERAL	1	Tag Number	AIT-002				PROCESS		UNITS	DATA		
	2	Equipment No.	~				56 Fluid			SOUR GAS		
	3	Service	10-8 to 10-10 Jumper H2S Analysis				57 Fluid Phase			VAPOUR		
	4	Line Number	P-313-DSC-4"-38H				58 Pressure @ Flow - Min		kPag	1379		
	5	Line Size - Schedule	4" x Sch 80				59 - Normal		kPag	2070		
	6	P&ID	PS00472A				60 - Max		kPag	3000		
	7	Sour Service	Yes				61 Return Press @ Flow - Min		kPag			
	8	Design Pressure / Temperature	250 psig/ -10 to 40°C				62 - Normal		kPag			
	9	Area Classification	Class 1 Div 1				63 - Max		kPag			
	10	Type	Chromatograph				64 Temp @ Flow - Min		deg C	10		
ANALYZER	11	Detector Type	TCD				65 - Normal		deg C	38		
	12	Function	H2S Analysis				66 - Max		deg C	50		
	13	Fuel Gas	Carrier Gas	~	Helium		67					
	14	Range	0 - 10% H2S				68					
	15	Calibration	Turndown	1% of full range			69 Dew Point @ Flow		deg C			
	16	Gas Type	Yes (Note 2)				70 Viscosity @ Flow					
	17	Repeatability	Accuracy	0.10%			71 Density @ Flow			2.91 lb/ft^3		
	18	Response Time Max	5 min				72 Molecular Weight			19.8 lb/mol		
	19	Sensitivity	Drift	~	~		73 Specific Heat Ratio (K)					
	20	Output	4-20 mA				74					
SAMPLE SYSTEM	21	Contacts	Input	6 dry/2 wet			75					
	22		Output	4 relays			76					
	23		Type	SPDT			77					
	24		Rating	5 A @ 120 VAC			78 Vapour Pressure					
	25	Communication	Modbus				79 Critical Pressure					
	26	Indication	LCD Screen				80 Percent Solids					
	27	Calibration	Auto Cal				81 Particle Size					
	28	Process Connection	1/4" bulkhead swagelock tube				82 Specific Gravity					
	29	Enclosure	Not WP Rated				83					
	31	Power Supply	Watts	24 VDC	75W @ 24 VDC		84					
ACCESSORIES	32	Cable Type					85 Stream Composition - Mol %		LRV	URV		
	33	Configuration Interface	Remote PC GUI				86					
	34						87					
	35	Sample Conditioning System	Yes				88					
	36	Number of Streams	1				89					
	37	Drawing Number	~				90					
	38	Sample Switching Valves	Yes - Auto Cal				91					
	39	Sample Transport Tubing	1/4" 316 SS seamless				92					
	40	Sample Probe	Model #	Genie GPR-2NG			93					
	41		In Conn.	3/4" NPT			94					
	42		Out Conn	1/4" NPT			95					
	43		Press/Temp Rating	3500 PSI / 85°C			96					
	44		Insertion Length	7"			97					
PROCUREMENT												
46							98 Purchase Order No.					
47	Vapourizing Regulator	No					99 Manufacturer		Galvanic Applied Science			
48	Sample Pump	No					100 Model No.		PLGC II			
49	Eductor	No					101 Vendor		Galvanic Applied Science			
50	Liquid Knock out /shut off	Yes					102 Electrical Approval		Class 1 Div 1 Groups BCD T3			
51	Indicating Rotameter	Yes					103 CRN		Alberta			
52							104 Dim./ Interconnect Dwgs.		Yes			
53							105 Manuals		Yes			
54							106 Calibration Certificate		Yes			
55												

NOTES:

1. The Instruments and Accessories shall be supplied with 316 SS tags.
2. 5% H₂S cal Gas required



Suite #700, 110 - 12th Ave. SW
Calgary, AB T2R 0G7
Phone (403) 234-6300
Facsimile (403) 232-8298
www.psnworld.com

Procurement Service Requisition

Cover Sheet

Client: EnCana
Project Name: 10-8 to 10-10 Jumper
Location: 10-08-71-08-W6M

Project No: 380700
RFP/RFQ No: 380700-012 PO
AFE No: _____

1. REQUEST FOR:	<input type="checkbox"/> RFP - Request for Proposal <input type="checkbox"/> RFQ - Request for Quotation	<input checked="" type="checkbox"/> P.O. - Purchase Order <input type="checkbox"/> P.O. REVISION to existing PO # _____
REQUEST ORIGINATOR:	Dan White	
2. GENERAL DESCRIPTION: Analyzer Building		
3. RFP/RFQ CLOSE DATE:	TECHNICAL CONTACT: Dan White Phone #: 403-234-6387	
REQ'D DELIVERY DATE:	COMMERCIAL CONTACT: Nova Gillis Phone #: 403-234-6396	
4. FOB:	SHIP TO ADDRESS: TBD	
SHIP ATTN:	_____	
5. LIST OF APPLICABLE DOCUMENTS:		
FP#/RFQ#/Quote#: Q-2011.06.13.RF PSN		
Datasheet#: AIT-001 Rev 1, AIT-002 Rev 1		
Specifications: _____		
Spec deviation: _____		
Drawings: Analyzer Building layout, electrical drawings, interconnect drawings, dimensional drawings.		
Other: _____		
Inspection Level: Level 1 - Final Inspection Only		

Form No: PO.F.001
Rev/Date: C1-22-01-2010 (Previously PO.F.001)
Page 1 of 2

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Suite #700, 110 - 12th Ave. SW
Calgary, AB T2R 0G7
Phone (403) 234-6300
Facsimile (403) 232-8298
www.psnworld.com

Procurement Service Requisition

Internal Notes

Client: EnCana
Project Name: 10-8 to 10-10 Jumper
Location: 10-08-71-08-W6M

Project No: 380700
RFP/RFQ No: 380700-012 PO
AFE No:

6. PREFERRED VENDOR LIST: Single Source See attached Bid List Award To

1. **Galvanic Applied Sciences**
Address: 7000 Fisher Road SE
Calgary, Alberta
Contact: Ryan Fahl
Phone #: 403-252-8470
Fax #: _____
E-Mail: rfaul@galvanic.com

2. _____
Address: _____
Contact: _____
Phone #: _____
Fax #: _____
E-Mail: _____

3. _____
Address: _____
Contact: _____
Phone #: _____
Fax #: _____
E-Mail: _____

7. APPROVALS AND ROUTING:

	Req'd	Name
Originator	<input checked="" type="checkbox"/>	Dan White DW
Process	<input type="checkbox"/>	_____
Mechanical	<input type="checkbox"/>	_____
Inst. & Control	<input checked="" type="checkbox"/>	Dan White DW

	Req'd	Name
Electrical	<input checked="" type="checkbox"/>	Matt Hartwig MJ
Civil	<input type="checkbox"/>	_____
Project Manager	<input checked="" type="checkbox"/>	Damodar Singh DS
Construction	<input type="checkbox"/>	_____

8. NOTES/COMMENTS:

Reference AIT-001 and 002
Under what PO# 002
Analyzers AIT-001 and 002 have been shipped to an EnCana Specified location at EnCana's request. The analyzers are to be returned to Galvanic at Encana's expense. This is required to complete the installation of the analyzers in the cabinet and meet the purposed delivery date.

Heather - raynor @ encana.com



HEAD OFFICE: 7000 Fisher Road, S.E., Calgary, Alberta, Canada T2H 0W3 PHONE: (403) 252-8470 FAX: (403) 255-6287

QUOTATION # *Q-2011.06.13.RF*

ATTENTION: Dan White

June 13, 2011

PSN World c/o EnCana RFQ 380700-012
Calgary, AB
Phone: 403 234 6387
Fax:
Email: dan.white@woodgroup.com

Dan,

I am pleased to provide you with a quotation for (1) Cabinet to house (2) PLGCII H2S Analyzers.

The attached quote includes:

- Proposed Measurement and Analysis
- Analyzer Description and Specifications
- Analyzer Price Quote
- Terms and Conditions for Sale of Equipment

If you have any additional questions please feel free to contact me.

Yours sincerely,

Ryan Fahl
Canadian Sales Manager
Galvanic Applied Science, Inc.
Tel: 403 252 8470
Cell: 403 875 1264
Email: rfahl@galvanic.com

PROPOSED MEASUREMENT AND ANALYSIS

The tables below contain the information for the proposed measurement.

Instrument Tag #	10-10 Jumper
Installation Site & Location	AB
Application	Pipeline Gas
Component(s) Measured	H2S
Measurement Range	0-10%
Power	110 / 220 AC
Electrical Classification	Div2
Sample System	N/A
Other Options	N/A

ENCLOSURE PRICE QUOTE

Enclosure:

72 inch X 72 inch X 24 inch Nema 4 Powder Coated Steel Enclosure. Enclosure will be insulated with R5 foam and heat reflective wrapping.

Electrical:

1 – Catadyne heater 1.22 KW Model W1012 c/w gas controls and 12 Volt start jumper cables
2 – Nema 4 Junction boxes c/w back pan, terminal blocks & Panduit
4 – Disconnect switches (2 GC & 2 Heat Trace Lines)
2 – 5 W/ft heat trace lines for samples c/w termination and end kits
1 – Net safety H2S Detector c/w sensor separation

Conduit system will be rigid aluminum:

Enclosure interior: Class 1 Div 1 Group C&D

Enclosure exterior: Class 1 Div 2 Group C&D

Instrumentation:

Supply and Install tube and fittings for the following:

2 – Sample lines
2 – Calibration lines
2 – Carrier lines
2 – Flare vents

All tubing to be Seamless 316 SS and all tube fittings to be Swagelok 316 SS.

Lighting option: \$1,250.00CDN

Supply and install one Class 1 Div 1 150W incandescent fixture (EVI Series) with switch.

TOTAL: \$39,200.00CDN

Confidential Information: The prices, product specifications or other information contained in this quote are strictly confidential and are supplied on the understanding that they will be held confidentially and not disclosed to third parties without the prior written consent of Galvanic Applied Sciences, Inc

